THE RAILWAY GAZETTE
A Journal of Management, Engineering and Operation
INCORPORATING
Railway Engineer · TRANSPORT · The Railway News
The Railway Times · Herapath's Railway Journal ESTABLISHED 1835 · THE RAILWAY RECORD.
RAILWAYS ILLUSTRATED · THE RAILWAY OFFICIAL GAZETTE

33 TOTHILL STREET, WESTMINSTER, LONDON, S.W.1.

Telephone: WHitehall 9233 (20 lines) *Telegrams: "Trazette Parl London"*

BRANCH OFFICES

GLASGOW: 139, Bothwell Street, C.2 · · · *Central 4646*
NEWCASTLE-ON-TYNE: 21 Mosley Street · · *Newcastle-on-Tyne 22239*
MANCHESTER: Century Insurance Building, St. Peter's Square *Central 7667-8-9*
BIRMINGHAM: 90, Hagley Road, Edgbaston · *Edgbaston 2466—3728—3732*
LEEDS: 70, Albion Street · · · · · *Leeds 27174*
BRISTOL: 20, Victoria Square, Clifton · · · *Bristol 33873*

Annually £5 by post Single copies, Two shillings
Registered at the G.P.O. as a newspaper. Entered as second-class matter in U.S.A.

Editor: B. W. C. Cooke, Assoc. Inst. T.

Vol. 113] FRIDAY, DECEMBER 23, 1960 [No. 26

CONTENTS

	PAGE
Editorial Notes	729
Sidelights on London Transport	730
High Speeds on 3-ft. 6-in. Gauge	731
125 Years of German Railways	731
Australian Commonwealth Railways	732
Passenger Transport in Southern Asia	733
Letters to the Editor	733
The Scrap Heap	735
Overseas Railway Affairs	736
Remodelled Station at Queen Street, Glasgow ...	738
Low Cost Construction in Tanganyika	741
Repairs to Earthquake Damage in Chile	742
Medical Centre at Crewe Works	744
Personal	745
New Equipment and Processes	748
News Articles	750
Contracts and Tenders	753
Notes and News	754
Railway Stock Market and Official Notices ...	756

Delayed Action

REPORTS in the daily press, so uniform in their context as to suggest a common source, suggest at time of writing that the White Paper on the reorganisation of British Railways, expected before the Christmas Recess of Parliament, will be a good deal less definite than was originally envisaged. Based on the recommendations of the Stedeford Committee which, having completed its work, has been wound up, it will not cover modernisation except in general terms, and the Government's decisions on specific modernisation problems such as electrification of the Crewe to London main line will be announced separately. The Minister of Transport, Mr. Ernest Marples, is seeking technical advice and, though it seems his statement will not be long delayed, it also appears unlikely that he will pronounce judgment until after Christmas. It also seems certain that no legislation will be introduced on the major proposals of the White Paper before the next session of Parliament (next November), though minor legislation is not ruled out. It is thought that the Crewe to London electrification will be delayed rather than abandoned, and it has been suggested that this small crumb of comfort may have been forced off the table at least partly in the interests of the electrical equipment supply industry, which would suffer considerable loss, both financially and in its development, if the London Midland scheme were thrown out. If these reports are correct it would appear that, behind the scenes, there have been second thoughts on the advisability of moving immediately toward yet another reorganisation of the railways and the B.T.C. Possibly, the practical disadvantages of another disturbance to an already-troubled industry are beginning to become apparent to the Ministry.

Engineering Supply and Demand

IT IS probable that, within the next 10 years, the supply of professional engineers to meet the requirements of the engineering industry will not be sufficient to satisfy demands. This conclusion was reached in the Government Reports on Scientific & Engineering Manpower in 1956 and 1959 which examined the position. It was, therefore, a matter of first importance to ensure that the maximum benefit should be derived from the supply of professional engineers at present available. A welcome opportunity for this problem to be examined and discussed will shortly be presented by the Engineers' Guild, which is arranging to hold a one-day conference in London in March, 1961. The theme of the conference is "The Professional Engineer—His Employment and Development." Addresses will be given by Mr. D. J. Mann, of Unilever Limited, on "The Engineer and the Technician," by A. R. Cooper, of the Central Electricity Generating Board, on "The Engineer in Management," and by Viscount Chandos, Chairman of Associated Electrical Industries Limited, on "The Engineer in Society."

The New Approach to Stations

THE new station for the electrified suburban line at Queen Street, Glasgow, which is described and illustrated elsewhere in this issue, shows the Scottish version of a trend apparent throughout all Regions of British Railways—a trend which is resulting in a transformation of the old-style railway station. In some respects—for instance, in the use of exceptionally long and wide platforms, extensive use of laminated materials, and modern conceptions of lighting—the new features to be found at Queen Street are typical of those characterising other new stations throughout the system, but in one aspect at least there has been a complete departure from normal surface railway practice. Because of the type of service provided, and because of the station's position in 1½ miles of almost unbroken tunnel, the design reflects in considerable measure the influence of the London Transport Executive's underground stations, particularly in the choice of materials. As can be seen from the illustrations to the article, the result is very good indeed, especially in the embodiment into the overall design of the advertisement panels and of the many signs, timetables, and directional notices.

Reduced Construction Costs in the Tropics

IN view of the drainage and other difficulties, the low cost, only £715,000, of building the 45-mile Kilosa to Mikume branch of East African Railways & Harbours, is remarkable. A short account of the way in which the cost was kept down is given on page 741. Use was made of 56-lb. rail manufactured by Krupp in 1913 and old 55-lb. track. These were laid by the German authorities on the Tanganyika Central line before the war of 1914-18. They were released when that line was re-layed, and have many years of useful life under light traffic. River training involved special measures, as did variations in rainfall and seasonal floods. A peculiarity of the area is the increase in rainfall by 1 in. for every mile of route on the new line. The gradient adopted was 1 per cent compensated in both directions, and the curvature limited to 8 deg. Formation width in cuttings is 17 ft. and on embankments 15 ft. The nature of local soils enabled staff quarters to be built of stabilised earth blocks made from a mixture of 1: 25 cement and earth.

Eastern Region Electrification Difficulties

IT is unfortunate to say the least, that British Railways ambitious plans for an intensive electrified service on the North-East London lines in the Eastern Region should

have received a severe set-back after only three weeks operation. As reported in last week's issue, certain Liverpool Street-Chingford and Liverpool Street-Enfield services were reduced on December 12, after the withdrawal of some 55 per cent of the stock following a series of electrical failures. There have been allegations that the new stock was not properly tested before it was put into service, but the prototype unit was run for 20,000 miles before the fault developed and all other units had at least 800 miles of testing before they went into service. Every effort is being made by the manufacturer to rectify the trouble, and Mr. H. Few, Traffic Manager, Liverpool Street, is determined to have the full service in operation by January 2. This case is an unfortunate example of matters which are beyond the control of British Railways, tending to influence its reputation for good service.

Indian Steel Plant's Production

AS explained on several occasions in recent months, the Indian Railways are vitally concerned in the great new steel plants coming into full production at Durgapur, Rourkela, and Bhilai. The Rourkela plant is on the Nagpur main line of the South Eastern Railway and will be at the coal-receiving end of the partly-built coal and iron railway from Chandrapura in the Bokaro coalfield described in our issue of June 6-August 14, 1959. It is noteworthy that this steel plant is not only turning out steel products for Indian use but also for export to the U.K., U.S.A., West Germany, and Japan. Some 78,000 tons of slabs and ingots are already being exported from this plant, worth over £2,250,000 and earning valuable foreign exchange. A new pipe-making plant has also just gone into production at Rourkela, turning out rolled steel pipes up to 14-in. dia. There are hundreds of miles of lead on these and other consignments to Indian stations as well as the lead on the raw materials.

Machine Tool Research

THE furthering of research in the machine-tool industry is to be assisted by the Research Association under the sponsorship of the Machine Tool Trades Association. The latter will not actually undertake research work itself, but will finance specific fundamental and development work carried out at recognised establishments. These include the Production Engineering Research Association at Melton Mowbray, the National Physical Laboratory at Teddington, and associated national engineering laboratories at East Kilbride. In addition, the mechanical engineering department of Manchester University and Manchester College of Science and Technology are concerned, as well as, in all probability the College of Aeronautics at Cranfield. It is understood that, initially, the industry will have rather less than £100,000 for the work of the association, half of which will be provided by the Department of Scientific & Industrial Research. An educational programme is also to be carried out by the Machine Tool Trades Association with the object of increasing the number of qualified entrants to the industry, particularly in the field of research and development.

Design of Railway Signalling Relays

THE progress in the design of plug-in relays and the work of the committee formed in 1957 to investigate the possibilities of miniaturisation and cost reduction in signalling equipment, was outlined in a paper by Mr. J. P. Coley on "Modern designs of signalling relays" read before the Institution of Railway Signal Engineers on December 7, 1960. The author observes that the complete relay consists essentially of two parts, the contact assembly and the operating coil and iron circuit, both mounted on a vertical insulating relay base. The contact spring supports are carried through the relay base and project at the back so that when the relay is attached to its plugboard the projecting contact springs make contact with the connectors in the plugboard. By the time the committee was formed signal engineers had realised that conditions had changed since the original designs were introduced some 20 years ago. With line relays the need for economy in power consumption was no longer paramount. The I.R.S.E. specification for miniature neutral line relays has been completed and is before the British Transport Commission for its approval. The new miniature relay is considerably smaller than plug-in relays in use at the present time.

Good North Eastern Region Publicity

THE party outings booklet issued by the North Eastern Region, British Railways, with its gay cover and well-reproduced photographs, is well up to the high Regional standards of production. Typography and layout are pleasing, and clarity is one of the advantages achieved. Although primarily concerned with short tours, many of which combine rail with motorcoach or steam travel, the 44-page pocket-size booklet contains a great deal of other information. There are notes on many pieces of scenic, historic, and recreational interest. The facilities mentioned include subscription cards, to enable individuals to make regular savings towards the cost of an outing; a wide variety of arrangements for meals; travel films for loan to clubs, schools, and so on; and visits to docks and large industrial plants. For organisers of outings this winter and next spring there are lists of entertainments and football matches in London and centres in the N.E. Region.

Sidelights on London Transport

SEVERAL interesting points emerged in the discussion which followed the recent announcement by Mr. A. B. B. Valentine, Chairman of the London Transport Executive, that London Transport plans a double instead of a single, increase in fares next January. The first concerns the Executive's regret that, because of lack of union agreement, it was unable to introduce the bonus scheme for bus crews which it proposed earlier this year: had this been accepted and put in effect, the Executive believes that the improved earnings of the busmen would have been matched by savings in expenses or by increased receipts, and that the scheme would have paid for itself. In that case, we presume it would not have been necessary for the Executive to have approached the Transport Tribunal with its second application to increase fares.

If the Executive's view is correct, and we know of no reason why it should not be, the transport unions should think again on this matter. The Executive has produced unarguable figures to back its application to charge higher fares, and there is little doubt that they will be accepted as conclusive by the Tribunal and the increases permitted. As everyone by now is able to forecast with certainty, the implementation of these —though it may well help the Executive's financial position— inevitably will produce a further decline in passenger numbers which in turn automatically will lead to curtailment of services and consequent loss to the workers concerned. If there is any likelihood that this effect can be avoided by the introduction of some such scheme as that proposed by the Executive, the unions should reconsider, for they stand to lose at least as much as the Executive in those circumstances.

Another point of interest arising during discussion concerned the value of British Transport advertising media in attracting and gaining staff. Mr. Valentine expressed his belief that the Executive had the best means of publicising its requirements of any employer in the country—in fact, the Executive received constant applications from other employers to use advertising space in buses and trains, and these applications not unnaturally were very carefully considered from the point of view of their providing competition in the same labour market as that which interested the Executive. Of the 800 or more applications received each week for employment with the Executive, from 600 to 650 came directly as a result of advertisements on public transport vehicles or premises rather than from the Ministry of Labour.

Allied with this interesting fact is Mr. Valentine's observation regarding the attraction of the Underground as a permanent career. Having said that the recruitment of bus staff was much more difficult than that of Underground employees, Mr. Valentine was asked why this was so. He answered that it was mainly because of the pay packet, but that another and equally cogent reason was that the Underground offered an established career with a good line of promotion. In addition to the financial incentive, the motorman has a vocational interest in staying in his employment: once he has become proficient, he is unlikely to change his job in the same way as a bus driver might be tempted by the easier hours—albeit less pay—involved in driving a van owned, say, by a multiple store. The market

requiring his particular skills is restricted in this country to the British Transport Commission.

Asked whether the Executive was trying to economise by the maximum possible use of one-man single-decker buses, Mr. Valentine said that this affected provincial and country areas to a greater extent than it did London, and the policy was being widely followed where practicable. Almost all single-decker routes are now operated by one-man buses, and suitable routes in the Central area are under consideration. Unfortunately, these, though under discussion with the unions, have not yet received union approval. Here again, we would urge the unions to think very carefully before turning down the Executive's proposals—surely the dual plight of employer and employee in the overall situation is sufficiently grave for concessions to be made on both sides ? In making its recent wage increases, the Executive has shown its own flexibility: we think the unions in their turn also should co-operate in permitting economies which will have results beneficial to both sides in the long run. Meanwhile, the Executive is experimenting in the Hemel Hempstead area with a new type of one-man bus with a separate entrance and exit. Economies aside, it is expected that this development will provide a better vehicle than has been available up to now.

High Speeds on 3-ft. 6-in. Gauge

AS a preliminary to the proposed high-speed 4-ft. 8½-in. gauge main line from Tokyo to Osaka, the Japanese National Railways administration recently carried out a high-speed test run on its 3-ft. 6-in. gauge—of which its whole 12,650 route-mile system is comprised—electrified Tokaido line. This test-run was briefly referred to in an editorial in our issue of October 23, 1959. The proposed maximum speed for the new standard-gauge line is stated to be 200 km.p.h. or about 124 m.p.h. Though such a speed was obviously impracticable on 3-ft. 6-in. track, a speed of no less than 163 km. (101 m.p.h.) was attained on the trial run.

The test train was made up of standard 1,500-V. d.c. electric multiple-unit streamlined "Kodama Limited" express stock rearranged to consist of four motor coaches and two trailers, the tare weight being 185½ long tons. In this way, 16 traction motors were available designed to give a combined output of 1,550 kW. at a speed of 72 m.p.h. The driving-wheel dia. was 2 ft. 10 in. only, and the driving axles were hollow to reduce unsprung weight. Electro-magnetic continuous dynamic brakes were fitted to all six vehicles.

The track in the seven-mile test length consisted of approximately 100-lb. rails on pre-stressed concrete sleepers spaced at 44 to each 82-ft. rail-length and with double-elastic fastenings. Ballast was broken stone. The cant on curves had to remain as standard to suit normal traffic speeds, as also did the lengths of transition curves. For the proposed maximum speed of the test run, 99 m.p.h., both these were inadequate, but the transitions were specially eased, and between reverse curves straights were replaced by sine-curves.

To ensure as far as possible the safety of the trial train at such speed, irregularities throughout the seven miles of track were specially corrected in accordance with recordings previously made with a high-speed track-inspection car. On the trial run, recordings were made at every 3 or 6 m.p.h. increment within the range 40–100 m.p.h. Among them were those of wind-resistance at high-speed, rail stresses, and vibration of each part of the rail fastenings, road-bed pressure and displacement, and vibration and deflection in bridge girders.

The trial proved entirely successful and it was expected that the results—being subsequently reviewed—would contribute valuable data for the future development of railway technique. Of immediate importance was the information obtained regarding the behaviour of rolling-stock, track, and contact system at very high speeds. Among the tests were those comparing the effects of a tyre after eight months normal wear with those of one newly turned. The former produced vibrations in bridges and track many times as great as did the newly-turned tyre, especially at the higher speeds. Reports on other results were to be published later.

From rest, 70 m.p.h. was attained in a distance of under ¾ mile on level gradient, there being fairly uniform though latterly a slightly-decreasing acceleration. Then followed rising gradients of from 1-in-100 to 1-in-300 coupled with by far the sharpest curve in the trial length, about 30-ch. rad. and ¾ mile long. These temporarily reduced acceleration, so that speeds between miles 1 and 1¼ from the start rose only from about 74 to 75½ m.p.h. Thereafter, on easy gradients and curves, speed rose more rapidly, but steadily until, at about 5½ miles from the start, 101 m.p.h. was reached. At this point, current was switched off.

It seems probable that this is the highest officially-recorded speed for a 185-ton multiple-unit train ever recorded on a 3-ft. 6-in. gauge line, especially with wheels of only 2-ft. 10-in. dia. Actually, speed was still rising slightly on a long 1-in-270 rising gradient, when current had to be cut off. It is noteworthy that the train was brought to rest from the above speed in a distance of just about 1 km., 0·62 miles.

125 Years of German Railways

IN Britain a 50-year jubilee or centenary of a railway, or a branch-line closure, may be the occasion of railway-sponsored celebrations, but nothing more. On the Continent, 120-year and 125-year anniversaries are occasions for elaborate festivities. The large-scale arrangements made by the German Federal Railway on December 6–7, to mark 125 years since the opening of the first German public railway, from Nuremberg to Fürth, in Bavaria, showed that there was still great public interest in railways, and goodwill towards them. The Deutsche Bundesbahn is lucky in that a good number of years ago, when the original locomotive *Adler* had long disappeared, two exact replicas from the original drawings were made, and one of these is in condition to steam and haul trains. With the replicas of five of the original passenger coaches, the train is a never-failing attraction for thousands. This was so in the centenary celebrations at Nuremberg in 1935, when Dr. Julius Dorpmüller, General Manager of the then German State Railway and later German Minister of Transport, mounted the footplate and took the controls, and the celebrations earlier this month attracted large crowds.

Probably because of the large number of sovereign German States which existed during the first 35 years after opening of the Nuremberg-Fürth line, many of the historical landmarks are not of the kind found in the railway histories of other countries. Relations between the several kingdoms, principalities, and grand duchies were anything but consistent. The Ludwigsbahn-Nuremberg-Fürth, for example, had an original concession for only 30 years; but only three years later, in 1838, came the first state line, that of the Grand Duchy of Brunswick from Brunswick to Wolfenbüttel. The need for some kind of co-operation between the numerous State and private lines springing up all over Germany was soon recognised, and as early as 1846 an association of all the railways in Prussia was founded; later this became the German Railway Association, and then the Central European Railway Association (Verein Mitteleuropaïscher Eisenbahn-Verwaltungen) which lasted until the second world war. By 1850 the first of these associations was drawing up primitive technical standards, and making regulations for wagon-interchange and goods traffic handling; and in 1851 it was issuing traffic statistics.

Germany's first *Bradshaw* (1845), was due to an official in the Thurn-und-Taxis widespread postal service; but the first timetable conference did not take place until 1871. Standard signal regulations for all German railways were introduced in 1875, three years after a law requiring continuous brakes on all passenger trains; in 1887 the Westinghouse air brake was adopted as standard equipment. Passenger train lighting of one kind or another was insisted upon by the Prussian railways from 1844, but standardisation on oil-gas lighting throughout Germany was adopted in 1871. Nine years later the first tests were made with electric lighting of trains, but, as elsewhere, progress was slow, and not until 1902 were the first regular trains (Berlin-Hamburg and Berlin-Sassnitz) lit by electricity.

Werner von Siemens' electric locomotive of 1879 is generally supposed to have been the first electric locomotive in Germany, but it seems that as early as 1840 a small electric tractor made by J. P. Wagner in Nassau was tried. More remarkable, in 1841, Störer in Leipzig was given a five-year exclusive privilege for the construction of electric locomotives, but his plans were not implemented. The first electrified public line in Germany was from Meckenbeuren to Tettnang (1895). History and status of electric traction from that date, as also the development of German steam, electric and diesel locomotives and

railcars, are too well known to need attention here, except to emphasise that they, like everything else in railway methods and equipment, including the era of the " Flying Hamburger " high-speed diesel trains in the 1930s, received considerable impetus from the top management and direction of Julius Dorpmüller.

Despite the unification of Germany with the impetus of Bismarck from the period 1866-1871, and the establishment of the Empire, the principal State lines—Prussia, Bavaria, Saxony, Württemberg and Baden—remained as separate entities until after the war of 1914–18, and though bound together in regard to traffic operation, signalling, braking, fares, and so on, retained their own standards of equipment and their own motive-power policies and designs. After that war, and the loss of the lines in the Danzig corridor, all State lines in Germany were drawn together, but with a separate management for the railways in the Eastern part of the country, though this came under the German Ministry of Transport set up in 1920. In that year the State-owned lines were fused as the Deutsche Staatsbahn, but not until 1924 was the Deutsche Reichsbahn Gesellschaft founded, and the whole direction and management divorced from Government and Ministry circles. In similar fashion, after the second world war, several years elapsed before it was possible to introduce a permanent organisation in the German Federal Republic (Western Germany), and although a Hauptverwaltung der Eisenbahnen was set up in Offenbach, near Frankfort, in 1947, it was 1949 before the name of Deutsche Bundesbahn (German Federal Railway) was used; and only in 1952 was the present organisation set up, under a board of management responsible to the Federal Government.

Progress since then in almost every field of railway activity has been outstanding. There has long been close co-operation with German industry, notably in the supply of motive power, which has been built by private manufacturers to the benefit of the German export trade. In the application of diesel traction, in electrification (at 15,000V., 16⅔ cycles, despite early adoption of a.c. traction for a local line), in development of passenger vehicles and of wagons for special traffics, mechanisation of freight handling, permanent way (including welded rails), bridges, and other structures, station architecture, and in the many aspects of rating and commercial practice, the Federal Railway of today has much to show the world. A comprehensive account of recent developments is given by Dr.-Ing. Hans Geitmann, a member of the board of management of the Federal Railway, in a special issue of the *Eisenbahntechnischer Rundschau*, the subject of brief notice on page 737. In a short space he covers many aspects in which the railways, and German industry, have combined successfully to serve railway users and benefit the German economy.

Australian Commonwealth Railways

THE report on the Commonwealth Railways' operations for the year ended June 30, 1960, over the signature of Mr. K. A. Smith, Acting Commonwealth Railways Commissioner, records gross revenue from the four systems they comprise of £A5,326,792, an increase of £A510,082 over 1958–59. Gross expenditure increased by £A506,776 to £A4,153,902, so that the result of working, excluding interest, was a surplus of £A1,172,890, or £A3,306 more than the previous year's surplus.

The principal results of working the four systems during 1958–59 and 1959–60 are given below.

On the Trans-Australian Railway revenue exceeded working expenses by £A674,338, the major increases in earnings coming from freight and livestock. These were in part offset by higher maintenance costs and wage increases, but there was a rise in traffic operating costs due to greater train and engine mileage run to handle increased traffic.

Earnings on the Central Australia Railway were slightly above 1958–59, rising to £A1,659,855 in 1959–60. The principal gain came from freight traffic, although livestock traffic income was much lower due to adverse pastoral conditions.

North Australia Railway financial results were very good. Earnings increased to £A261,809, with goods and livestock leading the improvement. A large proportion of goods earnings came from the carriage of stone and sand for the new runways at the R.A.A.F. Aerodrome near Darwin, but as this traffic ceased at the end of the year earnings are expected to be considerably less for 1960–61.

There was a slight improvement in the financial position of the five-mile Australian Capital Territory Railway, with the loss on working reduced to £A15,880. The financial position of this railway " is a matter of some concern," says Mr. Smith. All efforts to secure a reasonable increase in the tonnage of freight carried are frustrated by the constant, intense competition from road service operators. Higher freights have been rejected, as it is feared that they would have the result only of driving further traffic away from railway to road haulers.

Freights and fares, both local and inter-system, were not altered generally during the year, the last general rise on the three main systems being as long ago as September, 1951. For the nine years to June, 1960, the additional cost to the whole system of higher wages was just over £A4 million. This heavy extra cost has been entirely absorbed by the railways without passing to users, and this has been made possible largely by economies from complete diesel-traction operation and improved working procedures.

On the Trans-Australian Railway, through goods traffic increased sharply because of the service of fast express freight trains with modern all-steel bogie vehicles, coupled with competitive rates. The motor-body traffic from factory to Western Australia destinations continues to grow. The quantity of motor parts railed by motor-body builders increased, and the number of complete new cars railed from Eastern States to Western Australia reached substantial proportions.

Despite continued shortage of labour for track maintenance on the Trans-Australian Railway, the permanent way was maintained to a satisfactory standard. The majority of men engaged left the work within two months of taking up duty, and the work value obtained from these men was low. The use, with long-welded rails, of concrete sleepers with a probable useful life of 50 years, it is considered, would contribute to reduced maintenance costs and problems. A limited number of various types of concrete sleepers have been under test, but insufficient time has elapsed to enable a firm decision to be made as to their life and value. A pilot manufacturing plant for concrete sleepers has been set up. Conversion of the 3-ft. 6-in. gauge lines in the South-East Division of South Australia to 5-ft. 3-in. gauge, as an interim measure pending complete standardisation, has been completed.

The unit engine miles run by the 21 standard-gauge diesel-electric locomotives on the Trans-Australian and Central Australia Railways totalled 2·28 million miles. Since first placed in service in October, 1951, the standard gauge locomotives have run a total of 13·9 million miles, four having each run over over 1 million. During the current year six of the original fleet of eleven will also pass their 1 million mark. Mr. Smith reports that the diesel-electric locomotives continue to give the same excellent economic performance as in the first days of their service. Their efficient economic operation and

	Year ended June 30	Trans-Australian Railway	Central Australia Railway	North Australia Railway	Australian Cap. Territory Railway	Total for all Railways
Miles open for traffic	1960	1,108 miles	822 miles	316 miles	4 miles	2,252 miles
Earnings	1959	£2,940,618	£1,636,525	£209,666	£29,901	£4,816,710
	1960	£3,368,566	£1,659,855	£261,809	£36,562	£5,326,792
Working expenses	1959	£2,300,048	£1,126,686	£170,537	£49,855	£3,647,126
	1960	£2,694,228	£1,205,982	£201,252	£52,442	£4,153,902
Productive train-miles	1959	1,332,641	569,836	105,088	10,750	2,018,315
	1960	1,490,239	526,793	112,974	10,910	2,140,916
Gross ton-mileage	1959	942,608,276	549,472,776	25,904,825	2,387,095	1,520,372,972
	1960	1,109,630,781	547,872,171	29,871,255	2,646,855	1,690,021,062
Results of working (excl. int.) ...	1959	+£640,570	+£509,839	+£39,129	−£19,954	+£1,169,584
	1960	+£674,338	+£453,872	+£60,559	−£15,880	+£1,172,890
Interest (incl. exchange)	1959	£105,908	£198,924	£72,829	£1,363	£379,024
	1960	£102,069	£194,430	£70,332	£1,335	£368,166

high ratio of availability for service have been a major factor in the highly satisfactory financial results of the past nine years.

Delivery of the new all-steel fully air-conditioned second-class cars and vans for the Trans-Australian service, ordered from Kinki Sharyo Company, Osaka, has started. Sleeping and sleeper-lounge cars incorporate a radical departure from existing Australian railway practice in respect of second-class carriages in that the sleeping compartments are of the two-berth type instead of the usual four- and six-berth compartments. The sleeping cars have a staggered corridor and accommodate 36 passengers in 18 compartments, with one for the conductor. The sleeper-lounge cars will accommodate 20 passengers in 10 sleeping compartments, with seating capacity in the lounge section for 36 passengers.

Passenger Transport in Southern Asia

AS regards passenger operation, railways in Asia may be divided into those in the Near East which largely follow Continental practice; the U.S.S.R. Railways; the Japanese National Railways; the Chinese Republic Railways; and the group in Southern Asia, ranging from the North Western Railway of Pakistan to the Royal Cambodia Railways, which follows practices introduced under the former European managements, mostly British. This last category is the most likely to need rolling stock and other equipment from more industrialised countries; the several railways are large, and traffic is increasing.

In Turkey, Syria, and Lebanon the methods are those of railways in the less economically developed countries of Eastern and Central Europe. Israel Railways, though expanded and developed under British management in the period of the Palestine Mandate has adapted its passenger services over the restricted distances to changed conditions, including rapid increases in the population: much use is made of diesel railcars which provide quick transits to compete with intensive road services. Passenger trains on the Iraqui Republican Railways hauled by oil-fired steam locomotives have been accelerated slightly on the metre-gauge system. In view of the sparse population, enterprise is shown in running air-conditioned first- and second-class coaches on both standard- and metre-gauge sections. In Siberia general Russian practice is followed The railways of Japan, in passenger movement as in other respects, have the characteristics of highly developed systems of the West, with the handicap, as regards speed of the 3 ft. 6 in. gauge, which has been largely overcome with diesel and electric traction. Apart from low personal incomes, which restrict the scope of air travel, with its relatively high fares, the passenger traffic problems are those of Western Europe. In China, where the railway system is expanding rapidly, new practices are being evolved, based partly on the varying methods of the European-managed, now amalgamated in the Republic Railways, with other methods introduced under the Japanese occupation. The extent to which China will seek passenger rolling stock from the West remains to be seen. Self-sufficiency is an aim which is being achieved, but there seems to be a possibility that a.c. multiple-unit suburban electric stock will be sought from abroad.

LETTERS TO THE EDITOR

(The Editor is not responsible for the opinions of correspondents)

The Rheingold

December 6

SIR,—I was surprised to read your somewhat depressing note on the Rheingold in your issue of December 2, because I have used that train many times this year and have nothing but praise for it.

While you praise the DB stock, I do feel that you do it scant justice in failing to recognise that it has obviously been designed for just that very high-speed service which you so deprecate. The corridors are carpeted and have frequent rubber-edge, glass-paned swing doors that are there for the very purpose of reducing noise. The compartments are fitted with footrests and small retractable tables. In the smoking compartments there is a large ashtray in the front of every armrest, and every seat has a beamed reading light. An indication of the smoothness of the riding is that I have never once seen the cutlery in the dining car creeping across the table, usually the first sign of any roughness.

The Rheingold is only the seventh fastest train in Germany, though it is the fastest hauled by a separate locomotive. Experience seems to prove that locomotive hauled trains rarely suffer from the discomforts you criticise. Speed alone, surely, does not lead to discomfort. The S.N.C.F. "Mistral" and "Sud Express" are recognised as among the most comfortable trains in the world, and nobody has ever suggested that our own "Bristolian," which is faster than the Rheingold, is anything but comfortable.

In that connection, I would mention that I have found the section (diesel-operated) between Würzburg and Munich to be far more tiring, despite the lower speeds imposed by the serpentine nature of the route, because the lower speed in no way compensates for those persistent curves.

One reason that occurs to me for your correspondent's fatigue is that but few people actually start a "Rheingold" journey at Basel. If he had already had a journey of some hours before reaching Basel, he had had a pretty long day on the railway by the time he reached the Hook of Holland.

Incidentally, the night boat leaves the Hook at 23.40, not at 23.45.

Yours faithfully,

DERRICK BASS

London, S.W.1

The Commonwealth Bogie

December 5

SIR,—As manufacturers of the Commonwealth equalised type bogie having bolster with outside swing hanger, we were interested to read Mr. F. E. Lamond's letter in your November 18 issue, on British Railways new Pullman services.

He asks why British Railways should experiment with the Schlieren bogie "if, without waiting for the results, British Railways is adopting the Commonwealth bogie as standard." We would point out that the Commonwealth bogie was not adopted without trial. Prototype bogies for passenger vehicles were supplied to British Railways in 1956; and very careful records were kept of the performance of these bogies, both by the use of instrumentation to check ride characteristics and by measurement of wear.

It was established that with the Commonwealth bogie the period between wheel turning was twice that necessary with the standard British Railways passenger bogie, and that the Commonwealth bogie retained its good riding characteristics during the whole of this period. We claim that apart from any question of better riding comfort, which has been established by the trials and subsequent use of the Commonwealth bogie, the fact that the vehicles are out of service for less time for maintenance purposes enables the cost of the Commonwealth bogie to be recovered in about three years.

Yours faithfully,

C. J. DADSWELL
Managing Director

English Steel Castings Corporation Limited,
River Don Works,
P.O. Box No. 57,
Sheffield, 9

Bogie Shimmy

December 3

SIR,—Recent Press reports that, after several months in service, the Midland Pullman sets have developed bogie "shimmy," are of special interest in view of the history of the Metro-Schlieren bogie.

From the almost conventional S.W.S. I of 1925, with full-elliptical transverse bolster springs, came the S.W.S. II of

1932 using longitudinally-disposed half-elliptic bolster springs between the wheel sets, a lightweight version of which was used extensively on Swiss lightweight stock from 1936 onward. This bogie, usually satisfactory, does tend to shimmy, especially when light brake applications are made at speed. The otherwise very similar S.I.G. torsion-bar bogie of 1951 being free of this tendency, Schlieren introduced an improved version, using coil springs for the bolster in 1954. This is not yet in such widespread use as the earlier S.W.S. and S.I.G. bogies, but I have yet to experience a bad ride over one in Switzerland.

Why, therefore, should the similar Metro-Schlieren bogies misbehave ? The direct cause is almost certainly incorrect tyre profile, due to wear, but it would be most interesting to find the basic fault, causing such excessive wear in so short a time. British Railways' insistence on using a wheel diameter greater than in Switzerland, resulting in a greater unsprung weight of wheel-sets may be the cause, or perhaps some factor was overlooked in the re-design for larger wheeled bogies on closer bogie centres, under heavier coaches.

Again, the steel used for the tyres may differ from the Swiss steel, or brake blocks and brake rigging may be different and alter the pattern of tyre wear.

Perhaps an acknowledged expert, such as Mr. J. L. Koffman, would care to comment on this problem and its solution ?

Yours faithfully,

JOHN RODGERS

132, Worrin Road,
Shenfield, Essex

Riding Qualities of Passenger Vehicles

December 3

SIR,—The riding qualities of British Railways coaches have recently been subjected to comment in the press and elsewhere. Though much of the criticism may be justified, I have the impression that some of it is based on isolated journeys and not on experience which is able to look back, so enabling an assessment to be made as to whether any improvement has in fact taken place.

On the 76-mile London Midland Region main line between Rugby and Crewe, of which I have a detailed knowledge going back about 35 years, there can be no doubt whatever that smoothness of passage has deteriorated badly. At the present time, ignoring those small portions affected by modernisation works, the riding is nothing like as good as it was in the middle 1930's when the L.M.S. had the line in first-class condition. Indeed, with the exception of one or two places (Atherstone and Queensville Curve south of Stafford) where improvements have been made, present conditions are not noticeably better than they were in 1922, at the end of the L.N.W. regime. The Whitmore–Norton Bridge and Shilton–Brinklow section of the up fast line and Whitmore–Betley Road on the down fast are unmistakably in worse condition than they were 40 years ago.

These observations are made after journeys averaging once every 10 days or so over the past 18 months. The fact that the bad riding is so noticeable in any type of coach, old or new, makes me believe that the track has a good deal to do with discomfort over this section. Generally speaking, recently-shopped older L.M.S. vehicles appear to give smoother riding than postwar stock.

Another contributory factor is speed. Quite rightly, drivers are encouraged to recover lost time and, since nearly all expresses on this line are diesel-hauled, they wish to show what these machines can do. But what about the comfort of passengers ? On a recent lightly-loaded train, we left Stafford 2½ min. late, passed Whitmore at 86.2 m.p.h., averaged 92.6 between Madeley and Betley Road and ran into Crewe 7½ min. early. Needless to say, the train cavorted all over the place, rolling, pitching, and plunging by turns—all to arrive before time.

The drivers' practice appears to be to go " all out " when running under clear signals. A few nights ago I travelled in an up express running non-stop from Stafford to Nuneaton which, after a slack at Colwich, worked up to 78 m.p.h. over the junctions at Rugeley (nowadays a " bad " patch) and kept up an average of 81.2 from Armitage to the braking point outside Nuneaton. This included the " rough " stretch through Tamworth, which was perfectly smooth in L.N.W. days, and the reverse curves at Atherstone taken at 80 m.p.h., well over what I understand is the limit at this place. The roughness of this journey, in a middle first class compartment of a modern buckeye-coupled set steadied by loaded vans in front and rear, may be imagined.

The plain fact is that the rolling-stock and track on this particular section of line, and I daresay others, too, are not yet in a condition to give comfortable travelling at anything like the speeds now current with diesel traction. Considerable, and doubtless expensive, improvements will be needed before the suggested even higher speeds become a reality

Yours faithfully,

C. R. CLINKER

9, Regent Place,
Rugby, Warwickshire

The New Haven Railroad

December 10

SIR,—An editorial article in your December 9 issue refers to the New York, New Haven & Hartford Railroad as " one of the busiest in the United States." Judged by American standards, it is a minor railway, operating 1,725 miles of road, but running passenger trains on less than half of that mileage. In 1959 the New Haven worked 4,749 net ton miles per mile of road per day, compared with 7,384 for the whole of the U.S.A. railroads, 12,259 on the Pennsylvania, and 23,011 on the Norfolk & Western.

At the end of September the New Haven's freight revenue was 8 per cent below 1959, its passenger revenue was down 3 per cent, and its total revenues 7 per cent. Expenses were reduced by only 2 per cent, with the result that there was a deficit of $12.5 million, twice the deficit in September, 1959.

In 1952 the New Haven had a net railway operating income (earnings before charges) of $10.6 million. That dwindled to £5.7 million in 1955 and to $343,000 in 1957. At the end of 1958 there was a deficiency of $3.8 million, which rose to $9.2 million in 1959. The financial position at December 31, 1960, will be deplorable.

Yours faithfully,

R. BELL

Clacton-on-Sea

[The first diesel unit on an American railroad appeared in 1925, when 63,600 steam locomotives were in use. By 1933, the year of the great industrial depression, the number of steam engines fell to 50,060 and only one new engine was installed in that year. When the U.S.A. entered the last war the railways possessed about 40,000 steam locomotives and 281 diesel units. By 1943 the pressure on railway services became excessive and 438 new steam engines went into traffic and the same number of diesel units. The diesels proved so useful that in the next four years, to 1947, the stock of steam engines dropped to 35,100 and 3,650 new diesels were installed, bringing the strength of the diesel fleet to 5,770 units.

It was then left to the privately-owned railways, numbering over 100 and operating in 1948 about 226,700 miles of line, to choose their motive power for the future. Their decision was to scrap 21,120 steam locomotives between 1948 and 1953 and not a single one has been installed since, while 16,920 diesel units went into traffic. At the end of 1959 the Association of American Railroads reported that diesel units numbered 28,238, and that " there were 711 steam locomotives still on the rails, but almost all of these were either stored or unserviceable."

The revolution in motive power was complete. Since it began in 1948 freight tonnage in 1959 decreased by 18 per cent, net ton miles by 13 per cent and gross ton-miles in road freight service by nearly 9 per cent. With the aid of diesel power, the railways reduced freight train mileage by 29 per cent and freight train hr. by 41 per cent. The saving in freight locomotive mileage was 34.6 per cent, assisting locomotive mileage being cut by 81 per cent and light mileage by 68 per cent. The daily mileage of freight train locomotives rose from 117 to 145, or by 24 per cent. Although the revenue train load advanced from 1,018 tons to 1,365 tons, or by more than one-third, freight train speed between terminals rose from 16·2 m.p.h. to 19·5 or by one-fifth. But the greatest change of all was the increase in gross ton-miles per train hr. from 39,903 to 61,926, a difference of 22,023 or 55 per cent.—ED., R.G.]

THE SCRAP HEAP

Plain Speaking

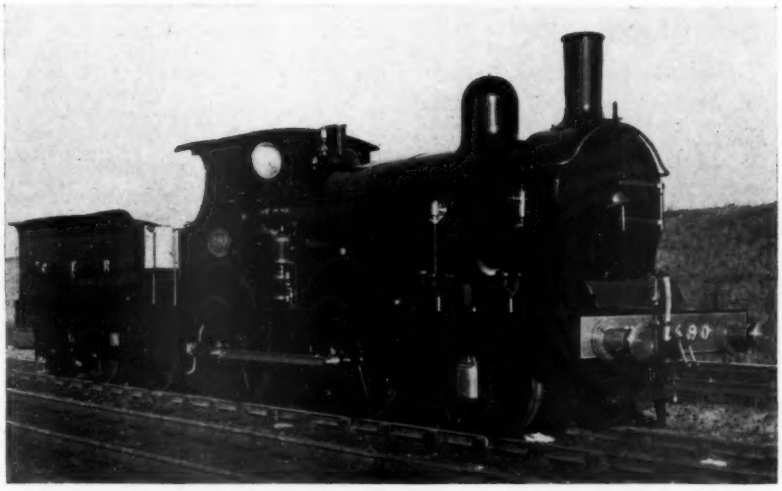
There is a sign at a railway crossing in Colorado which says : " The average time it takes a train to pass this crossing is 14 seconds—whether your car is on it or not."—*From the " Evening Standard."*

Excursions to the Bluebell

Excursion bookings and cheap rate returns to the 7½-mile Bluebell Railway in Sussex are to be issued by British Railways in the coming year. The Bluebell Preservation Society is negotiating for permission to run its trains into the main Horsted Keynes station so that there will be through connections next summer.

The Devil's Ride

On December 7 a replica of the *Adler*, or *Eagle*, the first railway locomotive ever used in Germany, made a journey from Nuremberg to Fürth and back to celebrate the 125th anniversary of the locomotive's first run, which took place on December 7, 1835. The original *Adler*, built by George Stephenson, was sold for £850 and went to Nuremberg with an English driver, William Wilson. Its first run 125 years ago was generally known at the time as the " Devil's ride." Citizens of Nuremberg came out in thousands to watch it, and the Roman Catholic members of the audience crossed themselves when the locomotive set off with a great hissing and spluttering. William Wilson stayed on in Nuremberg until his death about 15 years later, and helped to manage the Ludwigs Railway Company which owned the *Adler*. It is reported that the performance of the replica was not equal to that of the original *Adler.—From " The Guardian."*



Locomotive number 490, built in 1894, which has been taken to the B.T.C. museum for preservation

Last Journey

On December 11 the last of 100 locomotives built in the 1890's at Stratford Works to the design of James Holden for the Great Eastern Railway was carried through London streets on a road trailer from Stratford to Clapham, where it is to be preserved in the British Transport Commission museum of historical relics. On the way it passed Liverpool Street Station to which it journed many times during its working life. The locomotive, No. 490, a T26 Class 2–4–0 engine designed specially for use in the flat country of the eastern counties, was working locally between Cambridge and Marks Tey, British Railways, Eastern Region, until its retirement last year. It has since been restored at Stratford Works under the guidance of the British Transport Commission Curator of Historical Relics, and is now in its original livery of royal blue with red lining and vermilion coupling rods and buffer beams. An interesting feature of its construction is that both leading wheels have two axleboxes, one on each side of the frame, to allow for lateral movement, an arrangement which facilitated running on curves. During its 65 years' service, the engine was used in turn by three railway administrations; the G.E.R., L.N.E.R., and British Railways.

Never a Dull Moment

Drivers bringing their trains into Custom House station (East Ham) were warned to " beware of the bull " one day recently. The bull—actually a young bullock—was first seen grazing quietly behind the signalbox near the station. It charged up and down the track for nearly two hours followed by about six policemen and ten railwaymen, until it was cornered in a siding. Then, as a policeman tried to lasso it, the bullock jumped on the platform and ran down the main line toward the tunnel under the Royal Dock. Here, not liking the darkness, it swerved and ran straight back through its pursuers to the station. Breathless policemen finally lassoed it and took it back to its siding, where it was left in peace to resume grazing.

Advertising in Oslo

Illuminated advertising display between tracks at the National Theatre terminus, Oslo, of the Frognerseteren-Holmenkollen suburban line

OVERSEAS RAILWAY AFFAIRS

(From our correspondents)

VICTORIA

Locomotives for Standard Gauge

The first of five new " S " class diesel-electric locomotives for the standard-gauge line between Albury and Melbourne has been delivered to the Victorian Railways. Delivery of the remainder will be completed by the end of January. Built in Sydney, these 1,800-h.p. units will not be left idle until the 4 ft. 8½ in. gauge link line is complete. On reaching the border, the locomotives, which travel under their own power on the N.S.W. 4 ft. 8½ in. gauge line, are transferred at the Bandiana siding on to 5 ft. 3 in. Victorian gauge bogies. When fitted, the locomotives are able to go into service in Victoria. On completion of standard-gauge line, the locomotives can be quickly converted for use on the narrower gauge by changing bogies.

Standard Gauge Branch Lines

A two-mile branch will lead off the Melbourne-Albury standard-gauge line at Somerton to serve expanding secondary industries between there and Upfield. At present there are two industries with their own private sidings using the existing broad-gauge goods line between Somerton and Upfield. The Victorian Railways, aware of the possible industrial development likely to occur in the area, is planning sufficiently far ahead to meet demands for rail facilities. Freight trains are expected to start using the standard-gauge line between Melbourne and Albury by the end of 1961.

INDIA

Electric Locomotives

The first electric locomotive to be built in India will leave Chittaranjan Works by the middle of 1961. It is proposed to manufacture four d.c. electric locomotives during the Third Five-Year Plan commencing April, 1961, in the Chittaranjan Locomotive Works, which will also manufacture a.c. locomotives by the middle of 1963. The estimated cost of manufacture of the electric locomotives is placed at Rs.10 lakhs (£75,000) each.

BRAZIL

Electrification Extension

The Central Brazil Railway has completed the electrification of the line from Volta Redonda to the port of Rio and that of the Sao Paulo suburbs between Goianazes and Itaquera. Electrification is being extended from Juparana to Tres Rios and six new electric locomotives have been added to the Central Railway fleet. Electrification of the Rede Mineira section from Ilumirim to Ribeirao Vermelho is about to be inaugurated, electric trains have started running over Belo Horizonte suburban lines and the company's system is being connected to that of the Central Brazil Railway. Federal Railway representatives, on their return from British Railways electrification conference, said the Central Brazil is considering adopting industrial frequency traction on the Rio-Belo Horizonte line. They said electrification would greatly aid in solving Brazil's railway problem and the type of traction presented at the conference should prove economical. At present local railways absorb only 2·3 per cent of aggregate electrical consumption, amounting to 20,000 million kWh.

New Incorporations

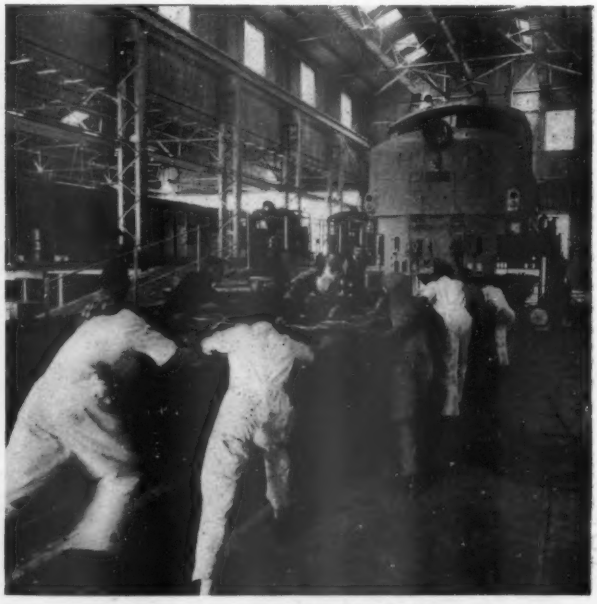
E. F. Itapemirim, a metre-gauge railway, 32·4 miles long, formerly belonging to the Leopoldina Railway and now the property of the State of Espirito Santo, is about to be incorporated in the holding company, R.F.F. After its incorporation it will again form part of the Leopoldina, with which it connects at Itapemirim. The first section of E.F. Central do Parana, from Apucarana to Araruva, 22·2 miles, has been incorporated in R.V. Parana-Santa Catarina and handed over to traffic. Ipiranga should be reached in January.

Closure of Uneconomic Lines

The National Railway Department (D.N.E.F.) is pressing for early enforcement of the 1955 law, which orders the

Diesel Traction on East African Railways & Harbours

Two of the ten "90" Class diesel-electric locomotives being supplied by the English Electric Co. Ltd., at Makadara. The third locomotive is the A.E.I. " Explorer "



Superstructure of a "90" Class locomotive jacked-up with four 35-ton Whiting Hi-lift jacks in the sheds at Makadara to allow for the changing of power bogies

closure of 718 miles of uneconomic branch lines, including the following: E. F. Marica, 95 miles, part of Central Brazil Railways; Conde de Araruama, 55 miles (E. F. Leopoldina); Barra do Pirai, 53 miles (Rede Mineira); Lussanvia branch, 64 miles (Noroeste do Brasil); E. F. Paulo Afonso, 69 miles (R. F. do Nordeste); also a number of shorter sections throughout Brazil. In addition D.N.E.F. recommends, subject to the owners' approval, closing some 300 miles of line forming part of the Sao Paulo railway system.

HUNGARY

Plastic Inserts for Concrete Sleepers

While concrete railways sleepers are being used more and more, there remains the problem of fixing the rails on to them. The wood inserts at present used are subject to rotting or attack by termites in tropical countries, and are not good insulation. The Plastics & Rubber Institute at Budapest Technical University, assisted by railway specialists, has been experimenting to find a suitable plastic insert. It is now announced that the prototype of a sleeper with plastic inserts has been produced under the direction of Professor Rudolf Balló. The insert was found to be a perfect insulator, is not attacked by by water, and is resistant to temperature variations. The first series has been subjected to fatigue tests equal to 50 years of service. The steel bolts wore out but the plastic inserts remained in serviceable condition.

AUSTRIA

Vienna-Line Stock

Delivery is about to begin of 15 new triple-car electric trains for the so-called Vienna Schrellbahn, that is the Austrian Federal Railways suburban system, and will form the first new stock for many years on these services. All 15 trains will not be in traffic before the beginning of 1962. Each train is to comprise a motor-coach, intermediate trailer, and control trailer, with an aggregate seating capacity of 210 and a train length of 225 ft. Estimated weight is 155 tons, top speed 62 m.p.h., and output 1,360 h.p. from four motors. The trains are being built by Simmering-Graz-Pauker, and electrical equipment is by Elin-Union and Austrian Brown Boveri. Cost per train is stated to be 10 million Austrian schillings (£139,000). Each train set will have a total of 210 sets and there will be standing room for 158 passengers.

Electrification

Work is proceeding on the conversion of a further section of the Südbahn, from St. Veit a.d. Glan to Knittelfeld, and completion is scheduled for next winter. Conversion on from Knittelfeld is then to be undertaken, and it is expected that within three years the whole of the Südbahn from Vienna to the Italian frontier at Taresio will be electrically operated on the 15-kV. 16·6-cycle single-phase system. Electrified mileage will then be 40 per cent of the Austrian Federal toute mileage, carrying 76/77 per cent of all traffic.

U.S.S.R.

Trunk Line Development

The railway network of the U.S.S.R. which is 125,000 km. long, will be increased by another 9,000 km. of trunk lines and 8,000 km. of branch lines, but over half of the entire track length will be relaid with heavier rails. The turnover of railway transport will be increased by 39 to 43 per cent and should reach 1,850,000 million ton-km. in 1965. About 100,000 km. of the network will be converted to diesel and electric traction, and 20,000 km. will have automatic blocking signalling.

WESTERN GERMANY

Station Reconstruction

Of the 450 station buildings which were destroyed in 1945, so far 300 have been re-built at a cost of some 450 million DM. For the remainder, a 10-year plan has been drawn up.

Publications Received

125 *Jahr Deutsche Eisenbahnen* (125 *Years of German Railways*). Darmstadt: Carl Röhrig Verlag, Holzhofallee 33a. 11½ in. x 8¼ in. 72 pp. Paper covers. Fully illustrated. No price stated.—This handsomely produced special issue of the *Eisenbahntechnischer Rundschau* commemorates the opening in December, 1835, of the first railway in Germany, from Nuremberg to Fürth. Development thereafter of railways in the several States before and during the Imperial epoch, and of the German State Railway between the wars, is briefly related. Progress since 1945 in many aspects, mainly technical, of railway activity is described in some detail by Dr.-Ing. Hans Geitmann, a President of the German Federal Railway and Member of the board of management. His review is illustrated with well-produced photographic illustration, maps, and diagrams. Editorial reference to some recent developments is made on page 731. Dr.- Ing. Hans-Christoph Seebohm, Federal Minister of Transport, is the author of the preface.

Let's Look at British Transport Advertising Sites.—This well-produced brochure is a résumé of a filmstrip in colour designed to show the variety and scope of sites throughout Britain offered by British Transport Advertising, the commercial advertising service of the British Transport Commission. The filmstrip will be shown in the offices of advertising agents and leading advertisers who apply to British Transport Advertising, Transad House, Leicester Square Station, London, W.C.2, or to any one of its offices in principal cities at the addresses given on the brochure cover. Points made clear include the size of the audience and wide coverage afforded by passengers on British Railways and the London Transport Underground, and on L.T.E. and other bus services of the B.T.C.; the wide variety of the audience; the long viewing times possible on journeys; variation in the size of areas of Britain which advertisers can select for coverage; and future possibilities such as illuminated bus sides.

SIG Vehicles.—An eight-page folder, with text in German, English, or French as desired, describes and illustrates all the products of the Swiss Industrial Company, Neuhausen-am-Rheinfall, Switzerland. Railway material shown includes T.E.E. trains and 2,800-h.p. electric motor-coaches.

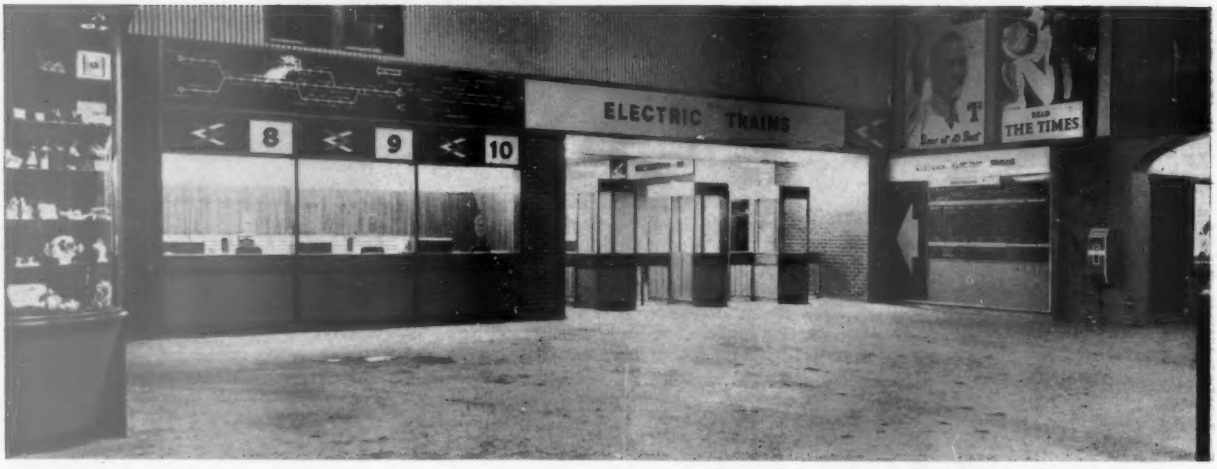
Rapier Truck Mixers.—High-discharge mixers with hydraulic drive, of 4-, 6- and 9-cu. yd. capacity are described in an illustrated brochure issued by Ransomes & Rapier Limited, of Waterside Works, Ipswich, and 32 Victoria Street, London, S.W.1. British and metric measurements are given. A booklet "The Truck Mixer Man," gives hints to drivers of Rapier mixers.

Transport Electronics News.—The November issue of *Transport Electronics News*, produced by the Electronics Advisory Officer and circulated by the Chief of Research, British Transport Commission, 222, Marylebone Road, London, N.W.1, includes a half-yearly report on electronic computing and control devices covering February to July, 1960. This mentions two important items on British Railways: the electronic data recorders designed and used for measurements made in system tests on newly-electrified lines; and the Robotug driverless platform truck installation at Wolverhampton Herbert Street Goods Depot, Western Region, described in our issue of September 23, 1960. A list shows in detail the progress made with installation of computers for various purposes in the London Midland, North Eastern, and Western Regions. The operations include stores control, wages compilation, traders' bills, road motor engineer's statistics, engine miles statistics, division of freight traffic costs, automatic ticket issuing, and parcels analysis. There are a comprehensive bibliography and abstracts of recently published material on computers and automatic control.

Boley Machine Tools.—Precision, sliding, surfacing and screw-cutting, and turret lathes; the DW 4 lathe for superfine turning; and a multi-spindle drilling and tapping machine are described in a leaflet listing the products of G. Boley G.m.b.H., of Esslingen/Neckar, Germany. Copies are available from the concessionnaire for Great Britain, Burton Griffiths & Co. Ltd., Mackadown Lane, Kitts Green, Birmingham, 33.

Remodelled Station at Queen Street, Glasgow

Use made of London Transport experience in building a station which embodies many new features



Dundas Court, showing (left to right): show-case, ticket office with route diagram above, ticket collectors' boxes, and train timetable board

A FEATURE of the Glasgow suburban electrification scheme, inaugurated on November 7, is the remodelled station at Queen Street, formerly known as the Low Level station.

The station now embodies many new features. Because of the type of service provided, and because of its situation in 1½ miles of almost unbroken tunnel, modernisation was conceived on the lines of an underground station, and use was made of the experience of the London Transport Executive, particularly in the choice of materials.

Uninterrupted Service

The work was carried out during the constant daily operation through the station of a steam train service carrying 20,000 people.

Reduced in number from four to two, the much wider platforms combined with the faster movement and discharging of trains provide sufficient line capacity. The remaining two lines were separated by a wall totally enclosing the central structural supports to the main station above, and completely segregating the Eastbound from the Westbound line. This has the effect of reducing noise and giving the maximum simplicity and cleanliness of the structure. It also provides a site for advertising and system route diagrams.

Ceramic Tiles

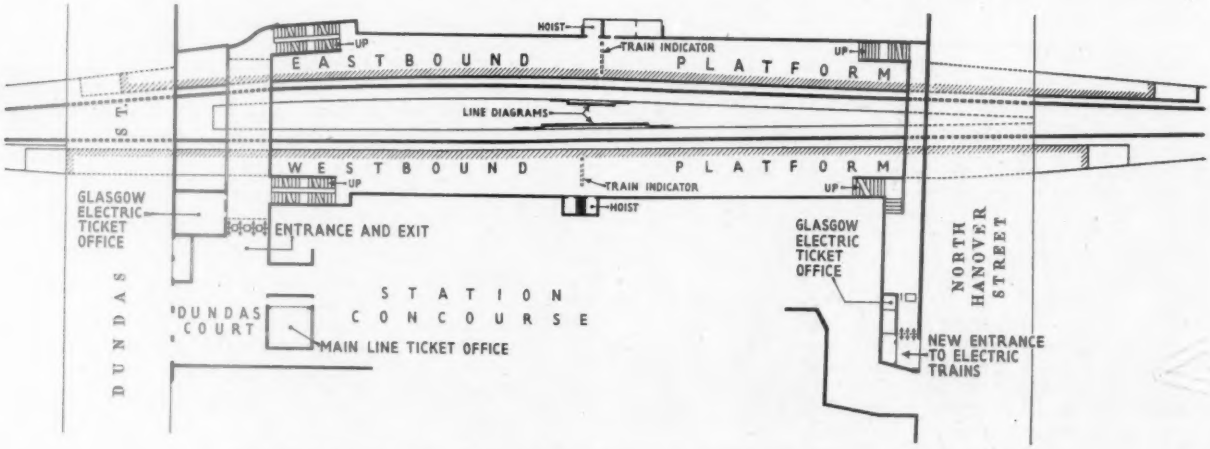
The platform walls and centre walls are tiled in 6-in. square x ⅜-in. thick ceramic tiles in light blue and ocean blue. Because of exposure in the cutting at each end of the station, frost-resistant treatment was specified, and the tiles were fixed with a rubber-base tile fixative. This was done because the tiles had to withstand vibration from trains passing within a few feet of their vicinity soon after fixing.

Over the area of the platforms hangs a ceiling of 4-ft. sq. asbestos tiles with polyester finish. This ceiling is demountable to allow inspection and maintenance of the extensive steel structure of the main station, which it covers. Main platform lighting is by modular fittings in the ceiling augmented by continuous strips in moulded perspex running above the platform edge and also along the rear tiled wall to illuminate the name signs and advertising panels incorporated in the design.

Platform Furniture

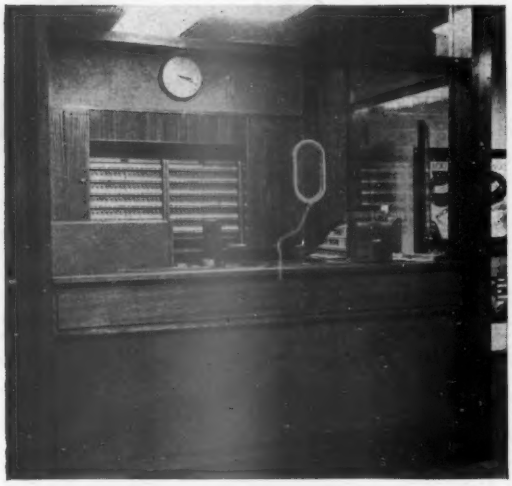
Platform furniture includes the following:—

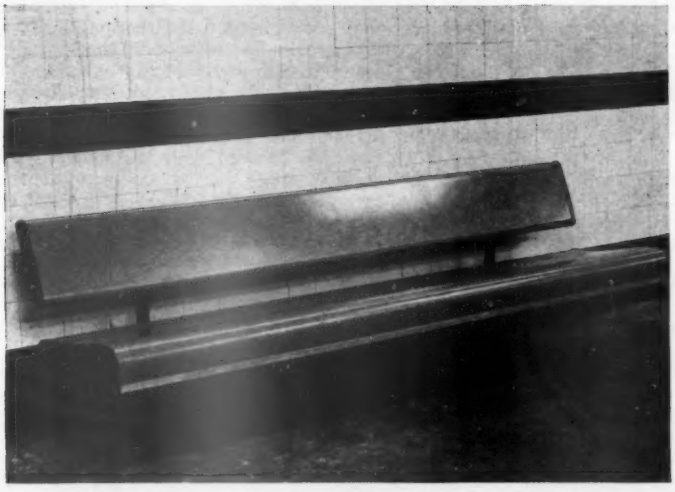
Stopping point marker lights set in the platform edge to indicate the stop-

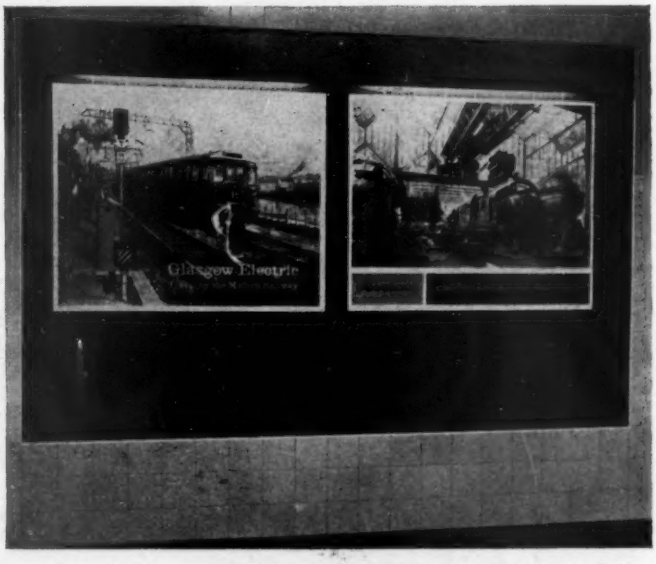


Plan of the station, showing wide platforms and dual entrances and exits

Details at Glasgow (Queen Street) Station







(Top left): booking office at North Hanover Street entrance; (top right): timetable board in Dundas Court. (Centre left): platform seat of timber and Formica laminate; (centre right): recessed auto sales machine flanked by litter bins. (Bottom left): staircase from Dundas Court overbridge to westbound platform; (bottom right): illuminated poster display

(Left): North Hanover Street entrance, showing ticket office and ticket collector's box. (Right): staircase leading from North Hanover Street corridor to westbound platform

ping point of three- and six-coach trains.

Litter bins of the proposed British Railway standard design in light alloy with galvanised wire baskets.

Platform seats of laminated timber covered with post-formed Formica moulded to the shape of seat and backrest and carried on tubular steel frames.

Electronic train indicator giving details of destination, type, and stopping points of the first train and destination and type of the second train on an illuminated indicator. This is controlled from the High Street signalbox.

Public address system, incorporated in the rear pelmet. This can be used separately on each platform or combined with the main-line station system.

Two Entrances and Exits

The station has two entrances and two exits, one near each end of the platform. To achieve this, staircases, overbridge, ticket office, barriers, entrance hall, and bookstall were provided at one end; existing staircases and entrance hall were widened, and ticket office and barriers renewed at the other.

Floors in these areas are of " Surefoot " ribbed rubber tiles laid with staggered joists in an asphalt-covered surround. These tiles were first used in the Scottish Region at Central Station, Glasgow, some five years ago. The walls are in 6-in. sq. and 6 in. x 3 in. ceramic tiles $\frac{3}{8}$-in. thick fixed with sand and cement.

Ceilings are of 2-ft. sq. asbestos, with polyester finish.

The ticket office fronts are framed in timber with melamine infil panel and hygienic speaking windows set in clear plate glass. Money scoops are of stainless steel and there is a rapid printer at the main ticket window of the principal ticket office. This machine can print tickets for the 10 main destinations at a rate of 200 a minute, or in single units.

Ticket collectors' boxes, of polished aluminium with melamine and timber infil panels, have tubular electric heaters, and are in telephone and loud-speaker communication with platform staff.

Staircases have toughened metal non-slip treads and convenient handrails at each side and in the centre. Handrails are covered with red vinyl. Two existing steel circular columns at the staircases have been tiled by the use of 6 in. x 1 in. tiles on sand and cement fixed by a bonding agent direct to the surface of the columns.

Signs Incorporated in Design

Throughout, an attempt has been made to incorporate the many signs, timetables, and notices in the scheme of decoration, and to exploit the decorative and directional quality of the electrification symbol and route diagrams.

Eastbound platform, showing strip and modular lighting, loudspeaker (in rear pelmet), contrasting tiling, new-design litter bins and seats, and incorporation into general design of advertising panels

Low-Cost Construction in Tanganyika

Drainage difficulties in building of Kilosa to Mikumi branch of Tanganyika Central Line, E.A.R. & H.

THE 45-mile branch of the metre-gauge East African Railways & Harbours from Kilosa, on the Tanganyika Central Line, to Mikumi is the first and northernmost part of the north-to-south link to connect E.A.R. & H. with the Rhodesia Railways 3-ft. 6-in. gauge system at Broken Hill. It takes off in a southerly direction from the E.A.R.& H. Central Line at Kilosa, which is about 180 miles from Dar es Salaam. The present railhead at Mikumi is equipped to deal with traffic from the Southern Highlands, and in the near future sugar from the Kilombero Valley also will be handled here.

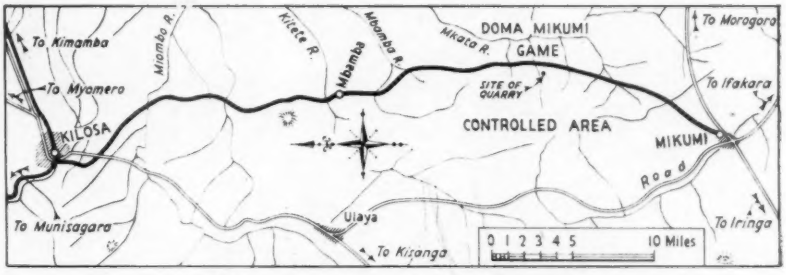
The branch was built as a pioneer line to afford a rail link between Mikumi and the Central Line at minimum cost. Second-hand track was used throughout and staff quarters constructed from stabilised earth blocks. The local soils proved quite suitable for this purpose, and a very satisfactory block was produced from a mixture of 1: 25 cement and earth.

Re-used Rails

The track used consisted of old German heavy-section rail, approximately 56 lb. per yd., manufactured by Krupp in 1913, and old B.S. 55-lb. track with keys only, and also with keys and distance pieces. These materials, which still possess many years of useful life under light traffic conditions, were recently released when the Tanganyika Central Line, originally built during the German regime before the war of 1914–18, was re-layed with new B.S. 60 lb. (N) track.

The gradient adopted was 1 per cent compensated in both directions, and the curvature limited to 8 deg. The overall curvature per mile is 3 deg. 45 min. Standard cubic parabola transition curves were used throughout. The formation width in cuttings is 17 ft. and on embankments 15 ft.

The largest bridge is near the take-off at Kilosa, where the line crosses the Mkondoa River. This consists of a centre span of 120 ft. with 95-ft. approach spans on either side. Steel box piles up to 80 ft. long had to be driven into the underlying rock strata and piling was necessary in the case of all pier foundations.



Route of Kilosa–Mikumi branch of Tanganyika Central Line

Drainage Problems

Two bridges, of 60 ft. and two 30-ft. spans each, were constructed over the other two perennial rivers which crossed the line. A further two bridges of two 40-ft. spans each were provided at the other river crossings where water flows during short periods of flash floods only.

It was intended that concrete and steel culverts should cope with the rest of the drainage. During the rains which occurred in the construction period, it was soon discovered that the drainage formulas normally applicable to other parts of East Africa did not apply here. After several culverts had been washed out, and washed away on more than one occasion, despite heavy gabion protection, it was clear that much higher run-off factors had to be applied here.

Annual Rainfall

A peculiar characteristic of the branch is that the annual rainfall increases by 1 in. for every mile of route between Kilosa and Mikumi. The annual rainfall at Kilosa being 40 in. and at Mikumi over 80 in. After careful study of conditions during the rains, it was decided to install 10 more 40-ft. spans between Miles 25 and 35. These were constructed from Universal beam sections 36 in. x 16 in. and 230 lb. per ft. run.

Much work had also to be put in on river training, which involved deepening and widening river courses both upstream and downstream of the line, and the use of some 1,200 gabions in the construction of river training and cut-off walls.

The total cost of the branch line was £715,000. It was opened to traffic on August 15.

NEW FIRTH CLEVELAND GROUP COMPANY.—The Firth Cleveland Group has formed a new company, Firth Cleveland Steel Limited, with registered offices at Wentworth Street, Sheffield. The company will operate from Holmes Mill, Rotherham. The Chairman is Mr. C. W. Hayward, Chairman of Firth Cleveland Limited. Firth Cleveland Steel Limited has been formed with the object of ensuring that the customers of J. J. Habershon & Sons Ltd., The Tenuous Steel Co. Ltd. and Firth Cleveland Steel Strip Limited reap the benefits of the potential of these three companies which are now operating in close touch with each other to provide a wide range of specialist steel strip. Orders placed with Habershon & Sons, Tenuous Steel and Firth Cleveland Steel Strip will continue to be executed by these companies to preserve continuity between the customers and the individual companies concerned.

Three-span bridge over the Mkondoa River

Repairs to Earthquake Damage in Chile

Running restored quickly after extensive damage by earthquake shock, landslides, and floods

By Juan Meyer Luther
Chief Engineer, Way & Works, Chilean State Railways

Antilhue Junction 10 days after overflow of Rinihue Lake. Note destruction of approach earthworks and damage to Calle-Calle Bridge

THE calamitous earthquakes on May 21 and 22, 1960, caused enormous damage in the south of Chile. The first affected the zone between the towns of Linares and Angol, and the second from Chillán to the south of the Island of Chiloé, that is, over a distance of more than 600 miles from north to south.

In this sector the railway is single-line only, and the earthquakes caused extensive destruction of track, bridges, and buildings, as a consequence of which all railway traffic was interrupted. Entire hills were moved, and three large landslides cut the River San Pedro, the outlet of the Riñihue Lake. This lake, with a surface area of some 40 sq. miles, rose 85 ft. If this volume of water had been allowed to break through the earth blocks in a single flood, the disaster to the towns, farms, and railways alongside the river would have been incalculable.

Major Disaster Prevented

For two months the civil engineers and their staffs worked strenuously, mostly in heavy rain, cutting channels in the firmer ground alongside the landslides to control the flood, and they were successful in preventing a major disaster. Even so, when the pressure of the water in the lake finally broke through, a flood moving at more than 9,400 cu. yd. per sec. in the San Pedro River caused considerable damage. The railway track alongside the river from Los Lagos to Valdivia, 25 miles, was in great part carried away and also the junction of Antilhue, located in the centre of this stretch and the point of divergence of the main line to the north. This line was cut

Chilean State Railways

by the destruction of an embankment 273 yd. long and also part of the Calle-Calle Bridge over the San Pedro River, where one of the supporting piers was undermined and collapsed. Only a few days before this flood it had been possible, after intense effort in heavy rain, to restore railway traffic to the town of Osorno, but this new disaster caused a fresh interruption of traffic for 24 days.

The earthworks, embankments, and abutments of bridges were most affected by the earthquakes, suffering sinkages and lateral displacements of different magnitude, which varied between 8 in. and 33 ft. The damaged portions of earthworks and embankments covered a total of more than 30 miles of track.

Embankment Displaced

The major destruction occurred in an embankment near Lipingue, where a mass of earth of 20,000 cu. yd. volume, 30 ft. high and nearly 400 ft. long, was displaced. The work of replacing this was very difficult because of the heavy winter rain and the consistency of the soil. The ballast to re-make this embankment had to be brought from 84 miles further north, passing over track with recently reconstructed earthworks.

Of the large number of bridges in the devastated zone, 49 suffered either total destruction or very severe damage. Most of the steel girders were thrown off their supports. The force of the earthquake is shown by the fact that the three girders, 131 ft. long and weighing 160 tons each, of the Río Bueno Bridge, were lifted from their supports and slewed over 7 ft.

Bridge Seriously Damaged

The bridge over the Chifín River was the structure which suffered the most serious damage. This bridge is made up of eight steel girders each 66 ft. long, supported on two abutments and seven piers 50 ft. high. The concrete piers, built in 1906, were cut horizontally in two and three planes, producing the breaking-away of large masses of concrete; as a result, the supporting section was reduced to one-third of the original section. It was possible to save the structure from total collapse by building a cover of reinforced concrete round each of the concrete supports, after the holes in the concrete had been refilled.

The railway buildings in this zone suffered extensive destruction; many were destroyed completely. The stations at Temuco, Valdivia, and Puerto Montt suffered the worst damage.

The primary obligation was to re-establish traffic to link the devastated area with the rest of the country. Due to the geographic configuration of Chile, the main line running from north to south permitted only one approach by which the emergency equipment could be taken from Santiago. The trains with the elements necessary to lift bridge sections, auxiliary girders, machinery, and so on,

Track overturned on Valdivia branch line

Reconstruction on Valdivia branch

could only advance once the line had been provisionally repaired. The work of rebuilding the earthworks and embankments and levelling of the track had to be carried out by gangs spread over the length of the line, and only then it was possible to despatch ballast trains carrying the material to refill the sunken and displaced earthworks and embankments.

Temporary Repairs

Some of the bridges were repaired only temporarily, leaving their permanent reconstruction until after traffic had been re-established. At Antilhue it was necessary to build a branch line round a large lagoon which had been formed in the approaches to the Calle-Calle Bridge. Work was carried on without interruption and in the cold weather with constant heavy rain, until the traffic to Puerto Montt was finally established after an interrruption of 3½ months.

The line to Valdivia has been re-established recently. This city was practically isolated except for an air bridge during all this time. With this the first stage of the reconstruction of the railway line has been completed. The work of its permanent repair and rehabilitation has since been put in hand.

Damage to Calle-Calle Bridge

It has been calculated that the value of the damage to the Chilean State Railways amounts to more than £3,400,000. This sum does not take into account the very large loss of revenue which occurred during the time the traffic was held up.

Steam Operation in East Africa

Mail train crossing Nile Bridge at Jinja, Uganda, E.A.R. & H.

Medical Centre at Crewe Works

Replacement of former railway accident hospital by medical centre adjacent to workshops

Exterior of the new medical centre at Crewe Works

BRITISH Railways, London Midland Region, new medical centre at Crewe Locomotive Works is situated at the West Street Park entrance to the works and gives a 24-hr. service. It supersedes the former railway accident hospital. The building is a two-storey reinforced-concrete structure, with a central foyer flanked by the surgery on one side and a physiotherapy department on the other. Large aluminium-framed windows are used on the entrance side of the foyer. The interior panelling is in African walnut. Adjoining the foyer are the administrative, records, and staff offices.

The spacious surgery is divided by glass-block partitions into several bays, each furnished with a bed and a stainless-steel basin and steriliser. Terrazzo tiles are used for the floor and plain tiles for the walls. Adjacent to the surgery are the doctor's consulting room, X-ray department, recovery room, and sterilising cubicle.

Colour-Vision Tests

In the dark room, equipped for the examination and treatment of eye injuries, an Edridge-Green lamp is used for colour-vision tests. These tests are applied as a routine check on all new employees. All staff members of the centre have been trained to use the Watson Mobilix 100 mobile X-ray apparatus. Temperature controlled developing and drying equipment is housed in an adjacent cubicle.

On the first-floor, rooms are provided for the storage of medical supplies, linen, nurses' accommodation, kitchen, and toilets. Timber work and furniture is in African walnut and the floors are linoleum covered.

Space heating is by radiators supplied by an automatic oil-fired boiler, supplemented by electric panel heaters. Fluorescent lighting is used in the medical treatment rooms and tungsten lamps with large reflector fittings in the remainder. All lighting is of a standard, the total electrical load exceeding 70 kW.

Provision has been made for film projection in the physiotherapy room. Edward Wood & Sons Ltd. was the main contractor for the centre which was designed by Mr. W. R. Headley, London Midland Region Architect. Lighting was installed by Barnett & Soames Limited, and heating by Young, Austin & Young Limited.

PRICE REDUCTIONS FOR "DURAGLAS" GLASS-FIBRE.—Further reductions in price have been made of "Duraglas" glass-fibre materials. The reductions affect both "E" and alkali-glass "Duramat" chemically- and mechanically-bound glass mats, chopped rove, and all qualities of glass rove.

SCHOOLBOYS TO SEE BRITISH TRANSPORT IN MINIATURE.—A true-to-scale model of a busy industrial and dockside scene in which British Transport's rail, road, dock, and inland waterway services are represented will be one of the highlights of the Schoolboys' Own Exhibition which opens in London after Christmas. Model trains, road vehicles, and barges, accurate in every detail, will be seen carrying goods to and from ships' sides and miniature cranes will be loading and unloading cargo. British Transport's stand also will have its own cinema where visitors will be able to see one or more of 14 transport films including the latest colour film about railway modernisation. After each performance boys and girls in the audience will be invited to compete for a prize in a quiz based on the films shown. Visitors to the stand will have an opportunity to discuss with experts the many interesting careers now open to boys and girls in British Transport. The Exhibition will be held at Olympia from 27 December to 7 January, 1961.

The up-to-date surgery

RAILWAY NEWS SECTION

PERSONAL

Mr. B. G. Balakrishnan, Senior Accounts Officer, Southern Railway of India, has retired from that position. He has accepted an appointment with Hindustan Steel Limited as Deputy Chief, Finance & Accounts Division.

Mr. H. F. P. Plumridge, whose retirement from the position of General Manager of Ghana Railways & Harbours was recorded in our December 16 issue, has accepted an appointment in the Organisation & Methods Department of Steel Peech & Tozer Limited, Rotherham.

Mr. A. E. Young, Chief Personnel Officer, South Eastern Railway of India, who, as recorded in our November 18 issue, has been appointed Chief Engineer of that railway, was born in 1906. He received his technical education at Guindy (Madras) Engineering College. In 1932 he entered the former South Indian Railway as a Works Supervisor in the Cochin Railway Conversion Scheme. After the completion of the scheme, he joined the former Bengal-Nagpur Railway in December, 1935, as a draftsman in the Chief Engineer's Drawing Office, and was promoted to be Assistant Engineer in 1938. He acted as District Engineer on the same railway in 1946, and was confirmed in that position at the end of the same year. After the reorganisation of the railways in 1952 he was appointed Senior Superintendent, Way & Works, on the Eastern Railway, and was promoted to be Deputy Chief Engineer in 1955. Later he was transferred in the same capacity to the South Eastern Railway. In 1956, he was appointed as Deputy General Manager (Works) of that railway, and served in that capacity for over two years. He was then transferred to Bilaspur as Engineer-in-Chief (Construction), and returned to the Headquarters at Calcutta in December, 1958, as Chief Personnel Officer, the position he has now vacated to take up his new appointment.

Mr. A. E. Young
Appointed Chief Engineer, South Eastern Railway of India

Mr. S. S. Mukherjee
Appointed Chief Personnel Officer, South Eastern Railway of India

Sir James Farquharson, General Manager, East African Railways & Harbours, has been appointed Engineer-in-Chief in the Office of The Crown Agents for Overseas Governments & Administrations. He succeeds Sir Reginald Taylor who retires in April.

Mr. I. C. Cocking has been appointed Secretary of the Society of Engineers.

Mr. C. Ayers, Acting District Goods Superintendent, Leeds, British Railways, North Eastern Region, has been appointed District Goods Superintendent, Leeds.

New Zealand Government Railways Appointments

The following appointments have been announced by New Zealand Government Railways:—Mr. H. L. McLeman to be Chief Accountant, succeeding Mr. E. L. G. Butcher; Mr. W. G. A. Walker to be Comptroller of Stores, succeeding Mr. J. A. O'Callaghan; Mr. G. R. Pearson to be Superintendent of Road Services, succeeding Mr. B. V. P. Fisher; Mr. I. Thomas to be Commercial Manager, succeeding Mr. F. G. Culling; Mr. G. F. Bridges to be Projects Engineer, succeeding Mr. E. A. O. Molst; Mr. L. G. Keys to be District Engineer, Wellington, succeeding Mr. W. P. Boyd.

Mr. S. S. Mukherjee, Deputy General Manager (General), South Eastern Railway of India, who, as recorded in our November 18 issue, has been appointed Chief Personnel Officer of that railway, was born in 1915, and received his technical education and training in Patna University (India) and Hull, England. He joined the Indian Railways as an Assistant Engineer on the former Bengal-Nagpur Railway in 1940. During the Second World War, he served with the Indian land forces. Subsequently he was appointed Assistant Engineer, and later became District Engineer in charge of several Districts and Sub-divisions in the system. In 1955 he was promoted to be Deputy Chief Engineer in charge of major construction and survey projects, and served as a member of the Indian Railways delegation to the first Asian Railway Conference held in Japan in May, 1958. In 1960, he became the Deputy General Manager (General) of the South Eastern Railway, the appointment which he has now vacated.

Mr. F. C. Asgill, Vice-Chairman of Stephenson Clarke Limited, a subsidiary of Powell Duffryn Limited, is retiring from that position on January 31, but will continue as a non-executive director. Mr. Geoffrey

Jones has been appointed managing director from February 1. Mr. H. S. Bennett is retiring from the board on December 31, and Mr. J. A. Bovey has been appointed to the board.

Mr. R. J. J. Stone has been appointed to be Private Secretary to Lord Chesham, Joint Parliamentary Secretary to the Ministry of Transport.

Mr. M. N. Bery, Engineer-in-Chief, Rourkela, South Eastern Railway of India, who, as recorded in our November 18 issue, has been appointed Chief Engineer (Construction) for that system, was born in 1918. After preparatory studies in Germany, he entered London University, and graduated in Civil Engineering from Kings College in 1937. In 1938 he joined the former Bengal-Nagpur Railway as Assistant Engineer. During the 1939-45 war he served overseas in Railway units of the Royal Indian Engineers. When he returned to the Bengal Nagpur Railway in 1946 he was promoted to be Bridge Engineer. During the period 1948-50 he served successively in several departments as Sleeper Control Officer, Superintendent (Catering & Grainshops), Statistical Officer and Personnel Officer. He then rejoined the Engineering Department as District Engineer (Open Line) in early 1951. On regrouping he was appointed a member of the Seniority Committee, Eastern Railway. On completion of the Committee's assignment in February, 1953, he was transferred to the Railway Testing & Research Centre, Lucknow, as Deputy Director, and was appointed as Joint Director in the Works Directorate of the Railway Board in 1955. Two years later he visited Europe and the United Kingdom as Technical Member, Secretary of the Indian Railway Steel Purchase Mission, which negotiated contracts for the import materials for the Railway Development Programme, and in June, 1958, he was promoted to be Director (Civil Engineering) in the Indian Railway Board. In April, 1959, he was transferred to the South Eastern Railway and posted as Engineer-in-Chief, Rourkela, in which capacity he was responsible for pushing through, amongst other doubling and yard remodelling works, the completion of the 42-mile long Rourkela-Dumaro New Broad Gauge branch line, constructed for the transport of iron ore to the new Steel Plant at Rourkela. He was posted as Chief Engineer (Construction) of the South Eastern Railway on April 3, 1960.

Mr. M. N. Bery
Appointed Chief Engineer (Construction)
South Eastern Railway of India

Mr. J. M. Kesson
Appointed Chief Engineer, East African
Railways & Harbours

Mr. R. H. Dent and Mr. T. C. Hale have been appointed directors of Small & Parkes Limited, Hendham Vale Works, Manchester.

Mr. Gilbert A. Hunt has been appointed Managing Director, Massey-Ferguson (United Kingdom) Limited.

Mr. T. P. Keeling has been appointed European Representative of Keelavite Hydraulics Limited, Coventry.

Mr. W. E. Grainger, Assistant Divisional Traffic Manager, Barrow, British Railways, London Midland Region, has been appointed Divisional Traffic Manager, Barrow, succeeding Mr. H. A. Mugliston, who, as recorded in our November 11 issue, has been appointed Divisional Traffic Manager, Liverpool, London Midland Region.

Herr Johan Schubert, Deputy Chief Mechanical Engineer & Chief of the Design Section, Austrian Federal Railways, is retiring on December 31.

Mr. J. M. Kesson, B.Sc., M.I.C.E., Assistant Chief Engineer (Technical), East African Railways & Harbours, who, as recorded in our October 28 issue, was appointed Acting Chief Engineer following the retirement of Mr. C. T. Henfrey, has now been confirmed in the position of Chief Engineer, E.A.R. & H. Mr. Kesson, who was born in 1914, was educated at the John Neilson School, Paisley, Glasgow University, the Royal Technical College, Glasgow, and the Westminster Technical Institute. He began his civil engineering career with the consulting engineers, Messrs. Warren & Partners, Glasgow, in 1932, and joined the London Midland & Scottish Railway at Glasgow two years later. In May, 1937, he joined the bridges section of the Ministry of Transport in London, and in 1939 he accepted an appointment with the Kenya & Uganda Railway as an Assistant Engineer at Mombasa. He was promoted to be District Engineer in December, 1949, and became Senior District Engineer in 1952. He was appointed Harbour Construction Engineer in 1952, and in this capacity was responsible for extensive developments and re-construction at Mombasa and Tanga. He became Assistant Chief Engineer (Administration) in 1953, and Assistant Chief Engineer (Technical) in 1954. He has often acted as Chief Engineer. Mr. Kesson is a member of the Institution of Civil Engineers, and was awarded the James Watt Gold Medal by that body for a paper presented at the 1956 Conference of Civil Engineering Problems in the Colonies.

We regret to record the death at the age of 84, of Mr. H. F. Vivian, formerly Chief Resident Engineer (Construction) of the Benguela Railway Company.

Mr. A. Kennaway has been appointed Controller of Technical Operations, B.T.R. Industries Limited.

Mr. E. J. Hughes, who, as recorded in our November 4 issue, has been promoted to be Chief Accountant of the Malayan Railway Administration, was born in Belfast, Northern Ireland, in 1925, and educated at The Holy Family School, Belfast and St. Kierons College, Bray. He joined the Accounts Branch of the Northern Counties Committee Railway (Ireland) in 1943, and later served with the Ulster Transport Authority. In 1954 he joined the Malayan Railway as Accountant and subsequently served in the positions of Paymaster, Accountant, Assistant Chief Accountant (Revenue) and Assistant Chief Accountant (Expenditure). He has also had experience in the Civil Engineering Department and the Ports Department. Mr. Hughes is Chairman of the Railway Provident Fund, a Member of the Public Trustees Committee, and a Director of the Cargo Handling Corporation and of two bus companies.

Mr. G. R. Whitehead, General Manager, Wolsingham Steel Co. Ltd., has been appointed a director of that company.

Mr. H. Armstrong, Assistant Accountant, The Northern General Transport Co. Ltd., has been appointed to succeed Mr. G. F. Harvey as Secretary & Accountant of The City of Oxford Motor Services Limited. Mr. G. F. Harvey has been appointed Secretary & Accountant of the Trent Motor Traction Co. Ltd.

Five new directors have been appointed to the board of John B. Pillin Limited, a member company of the Castrol group. They are Mr. R. Adams, Mr. J. A. P. Coe, Mr. L. J. Field, Mr. A. F. MacDonald, and Mr. J. W. MacMahon.

Lord Howick of Glendale has been appointed Chairman of the Colonial Development Corporation for three years from December 1, 1960, following the retirement of Sir Nutcombe Hume.

Mr. J. B. Spence has been appointed to the board of Lancashire Dynamo & Crypto Limited, and will be General Manager of the company works at Willesden, London.

THE INSTITUTION OF RAILWAY SIGNAL ENGINEERS

The following additions have been made to the Register of the Institution of Railway Signal Engineers :—

Members

Mr. H. A E. de Vos tot Nederveen Cappel, Chief Signal Engineer, N. V. Nederlandsche Spoorwegen, Utrecht ; Mr. J. T. Applewhite, Signal Engineer, South African Railways, Port Elizabeth, South Africa ; Mr. I. D. Stevenson, Superintending Engineer, Signals, Railway Head Office, Wellington, New Zealand ; Mr. P. A. D'Souza, Deputy Chief Signal & Telecommunications, Engineer, North Eastern Railway, India.

Associate Member

Mr. K. M. Kretchmer, Assistant Engineer, Signal & Telegraph Branch, New South Wales Government Railways, Australia.

Mr. J. Ryan, Vice-Chairman of the Metal Box Co. Ltd., who joined E. V. Industrials Limited as chairman last April to strengthen the board, has resigned from the company.

Eng. Pedro Petisco, who, as recorded in our December 2 issue, has been appointed Chief of the Stores Department of the General Mitre Railway, Argentina, was born in 1917 and took his degree as Civil Engineer at the National University of Buenos Aires in 1945. The following year he joined the Buenos Aires Western Railway as Assistant District Engineer at General Pico, and was promoted to be District Engineer shortly afterwards. Four years later he was transferred to a similar post at Bragado. In 1953 he went to the National Transport Undertaking as Departmental Sub-Manager in the Way and Works Advisory Section. On the suppression of this organisation in 1955, he was transferred to the General Mitre Railway as Chief of Maintenance in the Way & Works Department, where he remained until appointed to his present post.

Mr. C. R. Wheeler and Mr. M. J. Layton have been elected directors of the Steel Co. of Wales Ltd.

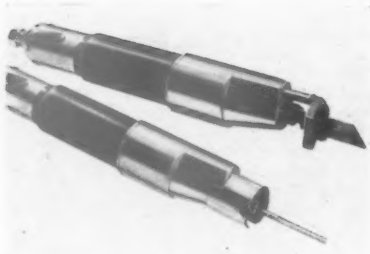
Mr. W. K. Temple, Chief Engineer of the Newall organisation, has been appointed director of the Newall Engineering Co. Ltd.

Mr. A. C. Stewart, Sales Manager of Chloride Batteries Limited, is retiring shortly, and will be succeeded by Mr. M. A. Griffiths. Until his retirement, Mr. Stewart will act in the capacity of a consultant. Reference to the transference of the company sales department is made on page 754 of this issue.

Mr. E. J. Hughes
Appointed Chief Accountant, Malayan Railway Administration

Eng. Pedro Petisco
Appointed Chief of Stores Department, General Mitre Railway, Argentina

NEW EQUIPMENT AND PROCESSES



Pneumatic Saw and File

THE CP 3017F lightweight production tool is designed to accommodate either a saw-blade collet or a file chuck.

It is operated by a unit-type Power Vane air motor, the rotary motion of which is converted to a reciprocating motion by a cam follower. The speed of operation of the saw-blade or file is 1,500 strokes per min. the stroke length being $\frac{3}{8}$ in. Controlled starting is effected by the throttle, which is of the graduated poppet valve type with neoprene seating. A built-in speed regulator is incorporated to adjust the cutting rate to the requirements of the work. An oil reservoir is located in the handle to supply lubricant to the motor, lubrication of the gearing being carried out through a filter plug without dismantling the gearing. To keep cuttings clear of the work the motor exhaust air is directed downwards through the nose of the tool to impinge on the blade or file.

The weight is 5 lbs. and the overall length is $14\frac{1}{2}$ in. The air inlet thread size is $\frac{1}{4}$ in., and the minimum hose size is $\frac{5}{16}$ in. Standard equipment supplied with the tool consists of one saw collet, five general-purpose metal-cutting blades, one work rest, one file chuck and guard, and one Allen wrench.

Further details may be obtained from Consolidated Pneumatic Tool Co. Ltd., 232, Dawes Road, London, S.W.6.

Internal-Gear Rotary Pumps

A RANGE of internal-gear rotary pumps for industrial purposes has been developed from the unit used in the Wayne petrol pump. The range includes a type specially designed for installation on tank wagons for rapid handling of fluids.

The arrangement of the pump and the operating principle are shown in the illustration and diagram. The casing contains two moving components; the driven member consisting of an outer rotor with internal teeth of circular section, and an idler member formed of a gearwheel mounted eccentrically, so that it meshes on one side with the rotor. On the opposite side a fixed curved member fills the space between the gearwheel and rotor teeth. When the pump is rotating, the separation of the teeth creates a vacuum near the fixed curved member, which is filled by liquid under atmospheric pressure. At the other end of the curved member the convergence of the teeth forces the liquid through the discharge outlet. The self-priming property of the pump enables liquids to be lifted from below pump level. The discharge is smooth and free of pulsation, and the rate of flow is virtually proportional to pump speed, irrespective of pressure.

The pumps are constructed either entirely in iron, in iron and bronze, or entirely in bronze, to suit a wide variety of liquids. Advantages claimed are as follow: The rolling action of the teeth, instead of the usual sliding action, reduces tooth wear. The close meshing of the teeth gives a high volumetric efficiency and quick priming. The cross-section at the root of the round tooth is greater than that of an equivalent square tooth and makes it suitable for handling heavy viscous liquids.

The capacity of the range of pumps varies between three and 250 gal. per min. at pressures up to 100 lb. per sq. in., those designed for tanker installation being within the range 50 to 250 gal per min.

Further details may be obtained from Wayne Tank and Pump Co. Ltd., Western Road, Bracknell, Berkshire.

Electro-Magnetic Lifters

THE Melbro range of electro-magnetic lifting beams with lifting capacities of from two to 20 tons, or more if required, is designed for handling heavy ferrous components, such as steel girders and plates.

The smallest size of beam has two M4 magnets, each capable of exerting a cohesive force of 6,615 lb., while the larger beams may be equipped with up to 16 magnets of the same type. It is claimed that, with the use of these beams, labour savings of 40 to 50 per cent are obtainable.

The lifting beam is designed to be suspended by chains from a stationary or a mobile crane, and to be operated by the crane driver. The electrical supply for the magnets is obtained from the power supply to the crane, or, in the case of a self-propelled mobile crane, from its 24 V. battery. The necessary safety precautions are provided to guard against power failure when working on high voltages.

The M4 magnet is also used in the special

unit illustrated, which is designed for lifting ferrous plate sections from the horizontal to the vertical position. This consists of a triangular frame of tubular section with a lifting hook at the apex and an M4 magnet at each base angle. The magnets are pivot-mounted to allow the plates, when lifted, to swing by their own weight to the vertical position.

It is claimed that an increased crane payload is obtainable because of the lightness in weight of the Melbro units compared with that of conventional lifting magnets.

Further details may be obtained from Melbro Machine Tool Co. Ltd., Melbro House, 2a, Alexandra Road, Manchester, 15.

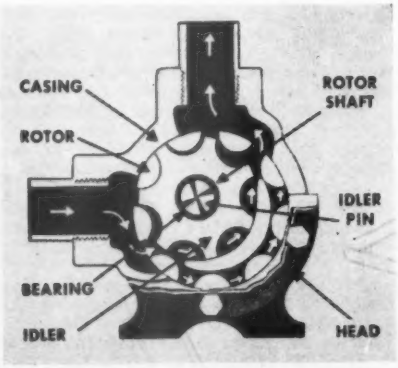
Locomotive Lifting Jacks

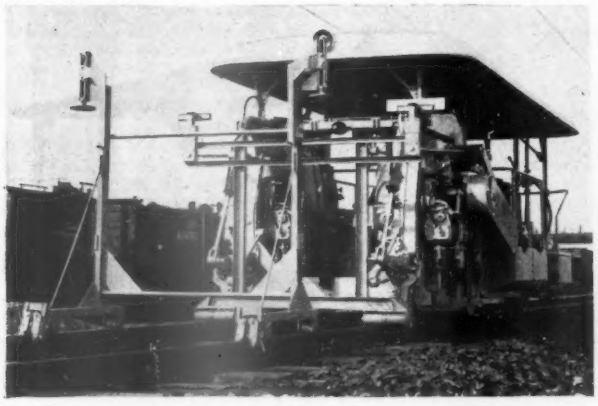
THE range of Matterson synchronised electrically-operated screw jacks described in our March 11, 1960, issue has been increased to include units with lifting capacities of from $7\frac{1}{2}$ to 40 tons. Previously the individual jacks were available only in 10-, 16-, 20-, and 25-ton sizes.

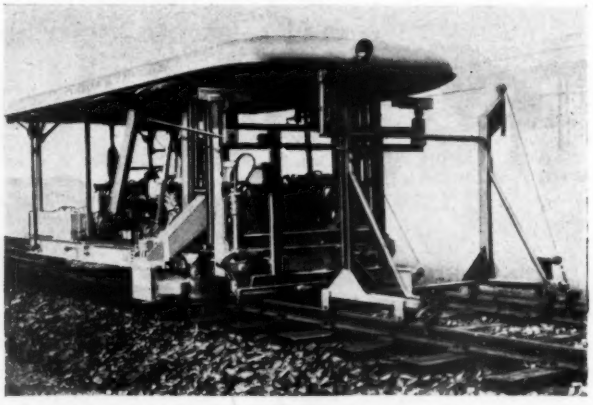
Further details may be obtained from the manufacturer, Matterson Limited, Rochdale, Lancs.

Outriggers for Mobile Cranes

WHEELED outriggers to increase the scope and use of truck-mounted and self-propelled cranes have been developed by Steels Engineering Products Limited.







Each has a rocking-beam suspension bogie equipped with two rollers having solid rubber tyres. The arrangement is designed to allow forward and reverse movements of a crane with outriggers extended under maximum load conditions. A reasonably level, well-made road is necessary for this equipment to function satisfactorily. The equipment is suitable for mobile cranes of up to 25 tons capacity.

Further details may be obtained from Steels Engineering Products Limited, Crown Works, Sunderland.

Technical Rubber Stamps

PEDCO technical rubber stamps are designed to speed up drawing-office procedure by eliminating tedious detail work in the reproduction of technical symbols.

Complete ranges of symbols are available for various fields of mechanical and electrical engineering, as well as for architecture and map production. Symbols in current production are in accordance with established American standards, but other designs can be produced to suit requirements.

All circular symbols are about ¾ in. dia. and rectangular symbols ¾ in. square, to provide a good-size legible reproduction.

Further details may be obtained from The Technical Stamp Division, Paper Equipment Distributing Company, P.O. Box 90, Prince Street Station, New York 12, New York, U.S.A.

Track-Levelling and Tamping Machines

THE Plassermatic Type VKR04 machine shown in the left-hand illustration above has been developed from the VKR03 tamping machine to enable the track maintenance operations of lifting, levelling, and tamping to be carried out by a single unit.

The lifting equipment is fitted at the front end of the vehicle, and the levelling unit is a bogie positioned on the track some distance ahead of the vehicle. A pair of wires, one for each rail, is stretched between a structure on this bogie and the vehicle, and kept taut at 100 lb. tension.

At the commencement of a cycle of operations, the levelling unit is fixed at a high point on the track about 150 ft. (90 ft. on curves) in advance of the vehicle. The vehicle, which is self-propelled, travels from sleeper to sleeper and the lifting unit raises the track in preparation for tamping until special beams attached to the unit make electrical contact with the levelling wires, thus automatically stopping the lifting process. The sag of the wires is automatically allowed for in this operation. During lifting, the track is kept level by a special clamp. When the vehicle has approached to within about 20 ft. of the levelling bogie, the wires are loosened, the bogie is moved forward to another selected high point on the track, and the sequence of operations is repeated. Only four men are required for the work, which, by means of the wire-levelling method, can be carried out at night and in fog. It is claimed that the machine produces a very accurate track at a rapid rate of progress. The vehicle can be easily removed from the track when required.

A similar but lighter machine, the Plasser & Theurer Type HM300St, shown in the right-hand illustration above, uses the same wire-levelling principle.

Further details may be obtained from Plasser Railway Machinery (G.B.) Limited, 77-79, Charlotte Street, Tottenham Court Road, London, W.1.

Automatic Unloading

UNLOADING from railway wagons of washed slack for industrial boilers at Stafford Allen & Sons Ltd., manufacturing chemists of Long Melford, Suffolk, has been simplified and speeded up by means of a Mayrath auger conveyor. Whereas the unloading was previously done manually by shovel, railway wagons are now shunted alongside the storage bunker, the Mayrath is placed in the outlet trap and the coal is taken out automatically. The only manual effort required is the moving of the coal toward the conveyor inlet when one side of a railway wagon has been cleared. Mayrath conveyors are made by Gordon Felber & Co. Ltd., Spirella House, Oxford Circus, London, W.1.

Welding Trolley with Magnetic Clamps

THE Melbro electro-magnetic welding trolley is designed to simplify clamping operations during heavy fabrication work either in workshops or on open sites where electric power is available.

The trolley incorporates two M4 Type electro-magnets and a hydraulic ram. It can exert pressures up to 5 tons, and is fitted with an adjustable bridge-piece to accommodate rolled-steel joists of all sizes up to 19½ in. in height. It is equipped with a pressure gauge calibrated to show the cohesion rating for various thicknesses of plates. The cohesive force exerted by the magnets is claimed to be much greater than that of any known type of vacuum clamp.

The trolley is fitted with rubber-tyre wheels, and can be supplied for operation at any voltage from 24 upwards.

It is claimed that up to 40 per cent saving in labour costs are obtainable in the clamping of rolled-steel joists and girder sections, and in aligning plate sections during welding, as well as saving in time by dispensing with the need for welding temporary supports to the work.

Further details may be obtained from Melbro Machine Tools Limited, Melbro House, 2a, Alexandra Road, Manchester, 15.

Progress of Glasgow Electrification

Spectacular rises in existing traffic; new routes discovered by public and becoming increasingly popular

The first month's traffic results for the Glasgow electrified suburban lines show that the initial target of doubling existing traffic has been achieved, and that weekend travel has been particularly heavy. Over 40,000 people passed through Queen Street Station on one Saturday compared with 9,000 on a comparable day before the services were electrified. On Wednesdays—Wednesday is the main shopping day in the Glasgow area—passenger-numbers have approached 20,000 against 8,000 in the pre-electrification period. Patronage during the opening week was over 400,000 against an average of 170,000 during the same period in 1959. The Sunday service is being well used—over 50,000 passengers are reported on this service each week.

Passengers travelling between 10 a.m. and 4 p.m. have increased to an outstanding extent, and more people are finding that they save time in taking a train from one part of Glasgow to another. Commenting on the favourable response to the new services, a British Railways spokesman has stated:—

Good-humoured Tolerance

"We are greatly indebted to the travelling public for its good-humoured tolerance and understanding, particularly in these early stages when technical difficulties are being encountered which undoubtedly result in inconvenience to our customers. Technical teething troubles were expected and, although the failures have been on a manageable scale and of no fixed pattern, the effect on the service has sometimes been quite severe. There have been defects in some of the equipment which, with the help of the manufacturers, are being diagnosed and overcome. Meantime, the railwaymen on the job are dealing with these troubles and doing their best to minimise inconvenience to the travelling public.

High Standard Expected

"It is appreciated that our passengers are only interested in the final result and that they expect a very high standard of service. This is well understood by the management and staff of the Scottish Region of British Railways, which recognises that the public and the press have been very tolerant of our difficulties. It is a tribute to the railway staff and speaks well of the resilience of the new electric system that the service recovers very quickly after a failure takes place and, in the recent foggy weather, many travellers have commented on the fact that, despite technical difficulties, the punctuality of the electric trains compares very favourably with other forms of traction."

The spokesman added that it was specially encouraging to see the enthusiasm of railwaymen of all grades from motormen, guards, and signalmen to the youngest station porters, all of whom had welcomed the new service and had willingly accepted the extra work that had been involved in launching and operating it. But, finally and sincerely, British Railways thanked its customers, old and new, for the way they had responded and interested themselves in Glasgow Electric.

Antofagasta (Chili) & Bolivia Railway

An ordinary stock dividend

The 72nd annual general meeting of the Antofagasta (Chili) & Bolivia Railway Co. Ltd. was held on December 14 in London, Mr. H. C. Drayton, Chairman, presiding.

The following is an extract from his circulated statement for the year 1959:—

In February, 1959, we were obliged to inform the Bolivian Government that we could no longer operate our railways in Bolivia. The reasons for this were fully explained in my statement last year. Since then our properties have been operated by the Bolivian Fiscal Administration. The Government's Commission, which was appointed to study the railway problem, presented its report some 12 months ago.

That report is a vindication of our action, as it fully agreed that, whatever may be the future of the railways, the urgent adoption of the measures for which we had so long been pressing was indispensable for the economic operation of the railways.

Satisfactory Operation in Chile

We had a satisfactory year's operation during 1959 in Chile. This was due to some increase in traffic, but also largely to the authority which we obtained from the Chilean Government in April, 1959, to adjust our rates generally to the level of the State Railways' tariffs, which latter were in most cases higher than ours. The operation of the Antofagasta company's own railways, Moles and Waterworks, after transferring £12,088 to the Equipment Fund (Chile), showed a profit of £321,522, before deducting debenture interest, compared with a loss of £16,177 for 1958.

From the above figure has to be deducted debenture interest amount to £110,448, which leaves £211,074. To this has to be added one income from extraneous sources amounting to £138,966; therefrom must be deducted the loss from the Aguas Blancas Railway and the losses attributable to the Bolivia Railway Company. Also deducting the two year's arrears of dividend to December 31, 1959, on our 5 per cent cumulative preference stock, we are left with a credit balance on net revenue account of £601,693. From this it is proposed to a dividend of 2 per cent (less income tax) be paid on the consolidated ordinary stock on December 15, 1960, and will mean that we increase our carry forward by £91,855.

This is the first time since 1956 that the consolidated ordinary stockholders have received any return on their investment of £6,415,344. On November 30, 1960, a dividend of 2½ per cent (less income tax) will be paid on the 5 per cent cumulative preference stock, bringing payments up to date at June 30, 1960.

We are going to adopt diesel traction on our Chilean Section bringing in its wake operational economies of no mean order.

Chairman's Additional Remarks

Addressing the meeting the chairman said: In my statement I said that talks might shortly recommence between the Bolivian Government and ourselves.

Preliminary meetings have, in fact, now been held in La Paz. But these, of course, are confidential, and it would therefore be impolitic and prejudicial to tell you anything about them at this date.

There is, however, no doubt that, since the time when we were obliged to suspend operations in Bolivia, the running of the railways has continued at a very heavy loss, which loss figures are now being investigated by our representatives in conjunction with the Bolivian Government Commission. I think, if any justification was needed for your board's attitude in making it clear to the Bolivian Government that they had made it impossible for us to carry on, those figures bear out that justification.

As an instance of the conditions still reigning in Bolivia, a general railway strike began on November 26. Although this was settled on December 3, we understand that a further stoppage is threatened.

The report and accounts were adopted.

Sir Arthur Kirby at Doncaster

Sir Arthur Kirby, Commissioner for East Africa, in the cab of an English Electric diesel-electric locomotive during a visit to Robert Stephenson & Hawthorns Limited, Darlington

Improved Passenger Facilities at Holyhead

Alterations to the customs shed at British Railways, London Midland Region, Holyhead terminal will be completed by December 18. The modifications, designed to expedite the movement of passengers, include the provision of an extra staircase to the ground floor and the construction of two banks of customs examination benches of reduced width so that both first and second class passengers' luggage can be dealt with immediately on disembarkation. The arrangement of the two examination benches and the new staircase will also result in passengers moving by the nearest staircase to the platforms

below instead of down one staircase, as at present. In addition, provision has also been made for improved amenities for the customs examining staff.

New Passenger Platform

A new platform for passenger traffic at ground level will supplement the modernised customs shed. The construction of this will result in slight interference with current operations while the work is being carried out, and it has been decided, therefore, to have this done when traffic movement is at its lightest between January and April. The provision of the extra platform will make it possible to have empty coaches waiting during periods of peak traffic so that passengers from the ships can board their trains immediately they have passed through customs. This will enable traffic areas to be kept clear of waiting passengers and will expedite the departure of the trains. The new platform will also allow supplementary trains to run right into the station without preliminary delay. As a result, the early departure of passenger vessels will be facilitated.

Rail Transport in Northern Ireland

Speaking recently before the Newry Chamber of Commerce, Mr. G. B. Howden, Chairman of the Ulster Transport Authority, warned the Northern Irish public that, if it did not adequately support its railways, these might cease to function.

Present revenue earned by those sections of the line that covered their costs—and these were few and heavily outweighed by unremunerative sections—fell far short of the amount required to offset losses incurred. This position existed quite apart from any question of loan charges.

There was no prospect of working services on the present basis without heavy losses. Unless something drastic were done, the system would have to be further pruned, if not largely eliminated.

In the face of generally-rising costs, it became more and more difficult to reduce expenditure without making drastic changes as, for instance, the introduction of alternative methods of working, or further closures.

Existing services had been carefully costed and there had been estimates of the capital expenditure involved in providing alternative methods of working, including further dieselisation. For the existing railway system, this would involve several million pounds.

Substantial reductions in working costs undoubtedly would be made, but these probably would not suffice to eliminate all the loss now incurred. The money required for modernisation would have to be borrowed, and the loan costs would go far to offset the benefits obtained, and might even leave the railways in a worse position.

More Business or Higher Charges

Railway revenue could be improved by increasing the volume of business or by raising rates and fares. The position had already been reached where sales resistance greatly reduced the full measure of benefit which should result from higher charges.

If the public continued to forsake the railways in favour of other means of transport, the railways would all but disappear. That day was fast approaching. It might be considered that, if all transport were to go by road, this would not be a bad thing, but even people who favoured road transport had been known to fall back on the railways.

There had been a growing agitation for the right, enjoyed before 1935, of anyone to operate freight services for hire or reward. Should this happen, the activities of the Ulster Transport Authority would be limited to the provision of road passenger services. These were being operated on the basis of diminishing net receipts. There might be a further agitation for the break-up even of these attenuated activities of the Authority and, if this were acceded to, Northern Ireland would have reached the end of all organised public transport services.

Speaking of the Newry line, Mr. Howden said that it involved a substantial loss in working, quite apart from loan charges on the written-down capital it represented.

Costs had been pared almost to the bone and, drastic changes apart, little could be done to save it. Again, it was essential for the public to play its part if it were to continue.

By increased support of both passenger and freight services, the public not only would help to ensure the line's continued existence, but would justify the Authority in spending money on improvements.

Early in the New Year it was intended to make further adjustments in the rail and road services in that area. These might not be wholly popular, but they were unavoidable in present circumstances. They would be discussed at an early date with interested parties.

Medical Centre opened at Crewe Works London Midland Region

Providing a 24-hr. service, this centre will supersede the former Railway Accident Hospital

Left to right: Dr. C. Leith-Barron, Dr. G. E. Graves Pierce, Mr. I. C. Forsyth, and Mr. E. R. Brown after the opening of the medical centre at Crewe

A new medical centre at Crewe Locomotive Works was officially opened on December 8 by Mr. Irving C. Forsyth, Mechanical & Electrical Engineer (Workshops), Derby. Situated at the West Street Park entrance to the works, this centre, giving a 24 hr. service, will supersede the former Railway Accident Hospital. Guests at the opening ceremony included departmental representatives from the works, London Midland Region officials, and the matron and consultants of Crewe Hospital. The guests were received by Mr. E. R. Brown, Crewe Works Manager.

Dr. G. E. Graves Pierce, Regional Medical Officer, in a short review of the medical and accident service for the Crewe Works and Station provided by the railway authorities, recalled that this service commenced in 1863 with the hospital conversion of a cottage in Forge Street. The hospital and service had been progressively expanded, culminating in the siting of the new medical centre in a more central and convenient location. Dr. Leith-Barron, the medical officer in charge, is assisted by a staff of six nursing sisters.

The centre is described and illustrated on page 744 of this week's issue of *The Railway Gazette*.

Celebrations in Germany

If the reception and formal entertainments of the 125th anniversary celebrations of the German railways at Nürnberg on December 6 and 7 were attended by a small and select number, the trip of a replica of the original 2-2-2 Stephenson locomotive *Adler* and train of five replicas of the original vehicles was watched by at least 50,000 persons in pouring rain along the six-mile route of the original Ludwigsbahn from Nürnberg to Fürth; and the tremendous interest in railways generally was indicated further by thousands of visitors during the two days to the Verkehrsmuseum and a special

Progress of Glasgow Electrification

Spectacular rises in existing traffic; new routes discovered by public and becoming increasingly popular

The first month's traffic results for the Glasgow electrified suburban lines show that the initial target of doubling existing traffic has been achieved, and that weekend travel has been particularly heavy. Over 40,000 people passed through Queen Street Station on one Saturday compared with 9,000 on a comparable day before the services were electrified. On Wednesdays—Wednesday is the main shopping day in the Glasgow area—passenger-numbers have approached 20,000 against 8,000 in the pre-electrification period. Patronage during the opening week was over 400,000 against an average of 170,000 during the same period in 1959. The Sunday service is being well used—over 50,000 passengers are reported on this service each week.

Passengers travelling between 10 a.m. and 4 p.m. have increased to an outstanding extent, and more people are finding that they save time in taking a train from one part of Glasgow to another. Commenting on the favourable response to the new services, a British Railways spokesman has stated:—

Good-humoured Tolerance

"We are greatly indebted to the travelling public for its good-humoured tolerance and understanding, particularly in these early stages when technical difficulties are being encountered which undoubtedly result in inconvenience to our customers. Technical teething troubles were expected and, although the failures have been on a manageable scale and of no fixed pattern, the effect on the service has sometimes been quite severe. There have been defects in some of the equipment which, with the help of the manufacturers, are being diagnosed and overcome. Meantime, the railwaymen on the job are dealing with these troubles and doing their best to minimise inconvenience to the travelling public.

High Standard Expected

"It is appreciated that our passengers are only interested in the final result and that they expect a very high standard of service. This is well understood by the management and staff of the Scottish Region of British Railways, which recognises that the public and the press have been very tolerant of our difficulties. It is a tribute to the railway staff and speaks well of the resilience of the new electric system that the service recovers very quickly after a failure takes place and, in the recent foggy weather, many travellers have commented on the fact that, despite technical difficulties, the punctuality of the electric trains compares very favourably with other forms of traction."

The spokesman added that it was specially encouraging to see the enthusiasm of railwaymen of all grades from motormen, guards, and signalmen to the youngest station porters, all of whom had welcomed the new service and had willingly accepted the extra work that had been involved in launching and operating it. But, finally and sincerely, British Railways thanked its customers, old and new, for the way they had responded and interested themselves in Glasgow Electric.

Antofagasta (Chili) & Bolivia Railway

An ordinary stock dividend

The 72nd annual general meeting of the Antofagasta (Chili) & Bolivia Railway Co. Ltd. was held on December 14 in London, Mr. H. C. Drayton, Chairman, presiding.

The following is an extract from his circulated statement for the year 1959:—

In February, 1959, we were obliged to inform the Bolivian Government that we could no longer operate our railways in Bolivia. The reasons for this were fully explained in my statement last year. Since then our properties have been operated by the Bolivian Fiscal Administration. The Government's Commission, which was appointed to study the railway problem, presented its report some 12 months ago.

That report is a vindication of our action, as it fully agreed that, whatever may be the future of the railways, the urgent adoption of the measures for which we had so long been pressing was indispensable for the economic operation of the railways.

Satisfactory Operation in Chile

We had a satisfactory year's operation during 1959 in Chile. This was due to some increase in traffic, but also largely to the authority which we obtained from the Chilean Government in April, 1959, to adjust our rates generally to the level of the State Railways' tariffs, which latter were in most cases higher than ours. The operation of the Antofagasta company's own railways, Moles and Waterworks, after transferring £12,088 to the Equipment Fund (Chile), showed a profit of £321,522, before deducting debenture interest, compared with a loss of £16,177 for 1958.

From the above figure has to be deducted debenture interest amount to £110,448, which leaves £211,074. To this has to be added one income from extraneous sources amounting to £138,966; therefrom must be deducted the loss from the Aguas Blancas Railway and the losses attributable to the Bolivia Railway Company. Also deducting the two year's arrears of dividend to December 31, 1959, on our 5 per cent cumulative preference stock, we are left with a credit balance on net revenue account of £601,693. From this it is proposed to a dividend of 2 per cent (less income tax) be paid on the consolidated ordinary stock on December 15, 1960, and will mean that we increase our carry forward by £91,855.

This is the first time since 1956 that the consolidated ordinary stockholders have received any return on their investment of £6,415,344. On November 30, 1960, a dividend of 2½ per cent (less income tax) will be paid on the 5 per cent cumulative preference stock, bringing payments up to date at June 30, 1960.

We are going to adopt diesel traction on our Chilean Section bringing in its wake operational economies of no mean order.

Chairman's Additional Remarks

Addressing the meeting the chairman said: In my statement I said that talks might shortly recommence between the Bolivian Government and ourselves.

Preliminary meetings have, in fact, now been held in La Paz. But these, of course, are confidential, and it would therefore be impolitic and prejudicial to tell you anything about them at this date.

There is, however, no doubt that, since the time when we were obliged to suspend operations in Bolivia, the running of the railways has continued at a very heavy loss, which loss figures are now being investigated by our representatives in conjunction with the Bolivian Government Commission. I think, if any justification was needed for your board's attitude in making it clear to the Bolivian Government that they had made it impossible for us to carry on, those figures bear out that justification.

As an instance of the conditions still reigning in Bolivia, a general railway strike began on November 26. Although this was settled on December 3, we understand that a further stoppage is threatened.

The report and accounts were adopted.

Sir Arthur Kirby at Doncaster

Sir Arthur Kirby, Commissioner for East Africa, in the cab of an English Electric diesel-electric locomotive during a visit to Robert Stephenson & Hawthorns Limited, Darlington

Improved Passenger Facilities at Holyhead

Alterations to the customs shed at British Railways, London Midland Region, Holyhead terminal will be completed by December 18. The modifications, designed to expedite the movement of passengers, include the provision of an extra staircase to the ground floor and the construction of two banks of customs examination benches of reduced width so that both first and second class passengers' luggage can be dealt with immediately on disembarkation. The arrangement of the two examination benches and the new staircase will also result in passengers moving by the nearest staircase to the platforms

below instead of down one staircase, as at present. In addition, provision has also been made for improved amenities for the customs examining staff.

New Passenger Platform

A new platform for passenger traffic at ground level will supplement the modernised customs shed. The construction of this will result in slight interference with current operations while the work is being carried out, and it has been decided, therefore, to have this done when traffic movement is at its lightest between January and April. The provision of the extra platform will make it possible to have empty coaches waiting during periods of peak traffic so that passengers from the ships can board their trains immediately they have passed through customs. This will enable traffic areas to be kept clear of waiting passengers and will expedite the departure of the trains. The new platform will also allow supplementary trains to run right into the station without preliminary delay. As a result, the early departure of passenger vessels will be facilitated.

Rail Transport in Northern Ireland

Speaking recently before the Newry Chamber of Commerce, Mr. G. B. Howden, Chairman of the Ulster Transport Authority, warned the Northern Irish public that, if it did not adequately support its railways, these might cease to function.

Present revenue earned by those sections of the line that covered their costs—and these were few and heavily outweighed by unremunerative sections—fell far short of the amount required to offset losses incurred. This position existed quite apart from any question of loan charges.

There was no prospect of working services on the present basis without heavy losses. Unless something drastic were done, the system would have to be further pruned, if not largely eliminated.

In the face of generally-rising costs, it became more and more difficult to reduce expenditure without making drastic changes as, for instance, the introduction of alternative methods of working, or further closures.

Existing services had been carefully costed and there had been estimates of the capital expenditure involved in providing alternative methods of working, including further dieselisation. For the existing railway system, this would involve several million pounds.

Substantial reductions in working costs undoubtedly would be made, but these probably would not suffice to eliminate all the loss now incurred. The money required for modernisation would have to be borrowed, and the loan costs would go far to offset the benefits obtained, and might even leave the railways in a worse position.

More Business or Higher Charges

Railway revenue could be improved by increasing the volume of business or by raising rates and fares. The position had already been reached where sales resistance greatly reduced the full measure of benefit which should result from higher charges.

If the public continued to forsake the railways in favour of other means of transport, the railways would all but disappear. That day was fast approaching. It might be considered that, if all transport were to go by road, this would not be a bad thing, but even people who favoured road transport had been known to fall back on the railways.

There had been a growing agitation for the right, enjoyed before 1935, of anyone to operate freight services for hire or reward. Should this happen, the activities of the Ulster Transport Authority would be limited to the provision of road passenger services. These were being operated on the basis of diminishing net receipts. There might be a further agitation for the break-up even of these attenuated activities of the Authority and, if this were acceded to, Northern Ireland would have reached the end of all organised public transport services.

Speaking of the Newry line, Mr. Howden said that it involved a substantial loss in working, quite apart from loan charges on the written-down capital it represented.

Costs had been pared almost to the bone and, drastic changes apart, little could be done to save it. Again, it was essential for the public to play its part if it were to continue.

By increased support of both passenger and freight services, the public not only would help to ensure the line's continued existence, but would justify the Authority in spending money on improvements.

Early in the New Year it was intended to make further adjustments in the rail and road services in that area. These might not be wholly popular, but they were unavoidable in present circumstances. They would be discussed at an early date with interested parties.

Medical Centre opened at Crewe Works London Midland Region

Providing a 24-hr. service, this centre will supersede the former Railway Accident Hospital

Left to right: Dr. C. Leith-Barron, Dr. G. E. Graves Pierce, Mr. I. C. Forsyth, and Mr. E. R. Brown after the opening of the medical centre at Crewe

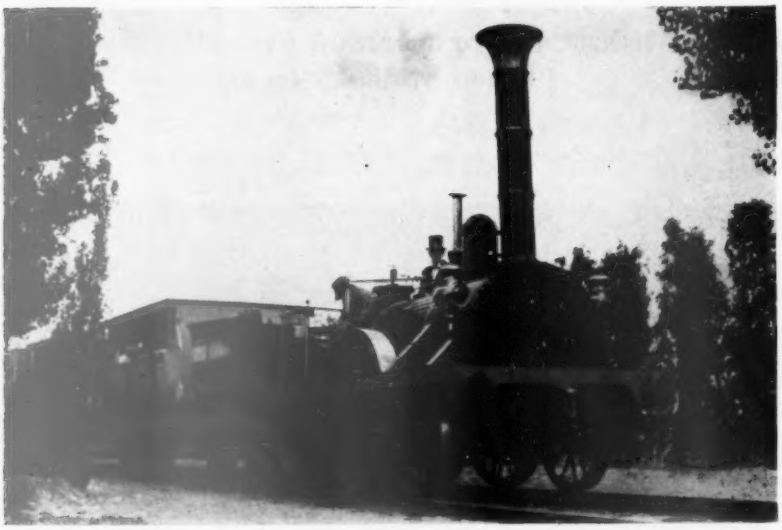
A new medical centre at Crewe Locomotive Works was officially opened on December 8 by Mr. Irving C. Forsyth, Mechanical & Electrical Engineer (Workshops), Derby. Situated at the West Street Park entrance to the works, this centre, giving a 24 hr. service, will supersede the former Railway Accident Hospital. Guests at the opening ceremony included departmental representatives from the works, London Midland Region officials, and the matron and consultants of Crewe Hospital. The guests were received by Mr. E. R. Brown, Crewe Works Manager.

Dr. G. E. Graves Pierce, Regional Medical Officer, in a short review of the medical and accident service for the Crewe Works and Station provided by the railway authorities, recalled that this service commenced in 1863 with the hospital conversion of a cottage in Forge Street. The hospital and service had been progressively expanded, culminating in the siting of the new medical centre in a more central and convenient location. Dr. Leith-Barron, the medical officer in charge, is assisted by a staff of six nursing sisters.

The centre is described and illustrated on page 744 of this week's issue of *The Railway Gazette*.

Celebrations in Germany

If the reception and formal entertainments of the 125th anniversary celebrations of the German railways at Nürnberg on December 6 and 7 were attended by a small and select number, the trip of a replica of the original 2-2-2 Stephenson locomotive *Adler* and train of five replicas of the original vehicles was watched by at least 50,000 persons in pouring rain along the six-mile route of the original Ludwigsbahn from Nürnberg to Fürth; and the tremendous interest in railways generally was indicated further by thousands of visitors during the two days to the Verkehrsmuseum and a special



Replica of Stephenson's 2-2-2 "Adler" hauling a train of replicas of the original coaches at Nurnberg

exhibition of railway motive power and rolling stock at Nürnberg Hauptbahnhof.

Proceedings began on December 6 when Dipl.-Ing. Geitmann, a member of the board of the German Federal Railway (D.B.), opened the rolling stock exhibition. Immediately afterwards Prof. Dr. Oeftering, chairman of the board of the D.B., held a reception for the foreign and principal German guests, and then a film was shown of the new equipment and track of the D.B., this film giving the view from a footplate on a journey from Frankfurt to Köln, and over certain sections of the Köln-Hamburg and Hamburg-Hanover-Frankfurt routes.

Working Replica

On December 7 one of the two *Adler* replicas which the previous day had been on view in the main hall of Nürnberg Hbf., was steamed, and, in immaculate condition, took a train of five old four-wheel coaches, fully laden with invited guests, along the original line—now a tramway route of the Nürnberg city transport. The return trip was accomplished in a German TEE diesel train.

Foreign Visitors

A second replica of the *Adler*, also built in D.B. workshops, was on view in the main hall at Nürnberg Hbf. A party of guests in the Nürnberg Schavspielhaus was welcomed by Professor Dr. Oeftering, and addressed by the German President, Dr. Lübke. The appreciation of the foreign guests was then expressed by M. Ph. Dargeuo, Directeur-Général of the French National Railways.

Passenger Terminal at Southampton Docks

(*See next column*)

Quay side view of terminal

Passenger Terminal at Southampton Docks

The passenger terminal situated between Nos. 105 and 106 berths in the New Docks at Southampton which, as recorded in our December 2 issue, was opened last month by Field-Marshal Viscount Slim, has since been used for the departure of passengers on the s.s. Oriana bound for Australia, New Zealand, and San Francisco.

The building has a frontage of 196 ft. and a depth of 102 ft. From the central reception area passengers can proceed direct to the adjoining sheds for customs clearance prior to departure. Amenities in the reception hall on the ground floor include a buffer, writing desks, *bureaux de change*, railway booking office, news stand, telephones, and toilets.

Lighting

The general lighting scheme consists of 27 modular lighting units with perspex diffusers, and recessed spotlights to mezzanine wood ceilings and concealed fluorescent units. Decorations include wall-facings in Siamese teak, p.v.c., and pre-cast panels, and the buffet is faced in selected Rio rosewood veneers.

Facing the quay, at a higher level above the mezzanine offices, is a covered balcony for visitors. The enclosure itself is heated and has seating and a refreshment service. Access is by way of the existing balconies of the adjoining sheds, these having been extended to connect with the new structure.

The new building was designed and constructed under the supervision of the Chief Docks Engineer, Mr. J. H. Jellett, with Mr. D. J. Doughty, Assistant Chief Docks Engineer, in charge of the contract work. Mr. C. B. Dromgoole was the architect.

The arrangements for power, heating, and lighting were designed and installed by direct labour of the Mechanical & Electrical Section of the Chief Docks Engineer's Department under the direction of Mr. R. G. Kelly, Assistant Docks Mechanical & Electrical Engineer. The civil engineering work, other than that executed under the various contracts, and in particular that required for uniting the building with the adjacent existing shed structures, was carried out by the civil engineering section of the Chief Docks Engineer's Department under the direction of Mr. W. J. Sinclair.

Principal contractors included Trollope & Colls Limited, which made the foundations; Hoveringham Engineering Co. Ltd., which dealt with steelwork; A. Monk & Co. Ltd., general building work. Decorations and furnishings were undertaken by Heals Limited.

Questions in Parliament

Road and Rail Advisory Staffs at Ministry

Mr. C. Mapp (Oldham East—Lab.) asked the Minister of Transport on December 12 if he would indicate the number of advisory staff and administrative staff, respectively, in his department dealing separately with road and railway matters, excluding in both cases the personnel engaged on safety arrangements.

Mr. Ernest Marples in a written answer ; The figures are:-

	(a) Roads	(b) Railways
Administrative staff	31	12
Professional and technical staff	352	1
Executive and clerical staff ...	681	28
Total	1,064	41

The staff shown in column (a) comprises those concerned with the construction and maintenance of roads and the regulation of road traffic. The broadly corresponding work in relation to railways is done by staff of the British Transport Commission.

Railway Superannuitants

Mr. Mapp asked the Minister of Transport on December 12 what would be the estimated cost to the British Transport Commission if supplementary assistance was authorised for railway superannuitants up to the basis of the present National Insurance pension and the estimated cost based on the increased pension operative in April next year.

Mr. Marples in a written reply : I am informed by the British Transport Commission that the estimated annual costs would be about £350,000 and £600,000 respectively.

Railways (Theft of Mails)

Mr. D. Jones (Burnley—Lab.) asked the Postmaster-General on December 14, if he would arrange, in consultation with the British Transport Commission, for the provision of additional safety measures for the conveying of mail-bags on British Railways, such as padlocks on the door of the grille and a lock on the grille itself.

Mr. W. Compton Carr (Barons Court—Cons.), and Mr. Marcus Lipton (Lambeth, Brixton div.—Lab.), asked the Postmaster-General what action he was taking to prevent mail thefts on trains.

Mr. J. R. Bevins (Liverpool, Toxteth div.—Cons.), said that bolts and chains had already been fitted on certain trains. In collaboration with the Minister of Transport and the British Transport Commission work was proceeding on a number of other security measures.

Mr. Carr asked that as much attention was paid to the safeguarding of mail on passenger corridor trains, which seemed especially vulnerable, as was possible.

Letter and Parcel Deliveries (Delays)

Lt.-Col. Bromley-Davenport (Cheshire-Knutsford div.—Cons.) asked the Postmaster-General to state the minimum and maximum time taken for delivering a small parcel between London and Yorkshire, Lancashire and Cheshire, respectively.

Miss M. Pike (Leicester, Merton div.—Cons.), said the Government was doing its best to overcome these difficulties.

Mr. A. C. Manuel (Ayrshire & Bute, Central Ayrshire div.—Lab.) said that contributory causes of delays in mail and parcel deliveries by the railways included fog and incorrectly-written addresses.

Staff & Labour Matters

N.U.R. Opposes New Pullman Service

The National Union of Railwaymen has decided to oppose the introduction of the new Pullman train service from London to Nottingham, due to begin on January 2.

The union claims it agreed to the introduction in June of the London-Manchester Pullman service only on the understanding that there would be no further extensions of Pullman services " prior to the complete assimilation of the Pullman Car Company by the British Transport Commission.

" The N.U.R. does not accept the logic of running services by a private undertaking inside a nationalised industry . . . and regrets that there was no prior consultation before the proposed extension to Nottingham was made known."

The B.T.C. points out that, although the Pullman Car Company (which employs 460 people) operates as a private concern, a controlling interest is held by the Commission. On the scope of Pullman services, the Commission agrees that, since October last year, when a similar argument was settled by the fixing of new wage rates for Pullman and catering staff, there has been an understanding that no new Pullman services would be introduced.

The proposed Nottingham run, says the B.T.C., is simply an extension of the existing service to Leicester which the Manchester Pullman train operates in between its daily trips to London and back. It does not count as a " new service."

Meanwhile, the N.U.R. Regional Council for Restaurant Cars, acting unofficially, has threatened to boycott the new service by a walk-off of chefs and waiters.

London Transport Bus Inspectors

A delegate conference of London Transport inspectors, representing about 3,000 of the London road control staff, at a recent meeting in London rejected a pay offer by the London Transport Executive.

The conference passed a resolution expressing the hope that the claim could be settled satisfactorily by negotiation or reference to an industrial court, but adding :—

" Failing to secure our just demands through the normal channels of conciliation, we request the full support of the Transport & General Workers' Union for the granting of plenary powers (permission to start an official strike)."

Engineering and Shipbuilding Workers' Pay Claims

At a meeting in York on December 8, representatives of the executives of the engineering and shipbuilding unions decided to seek further talks with the Engineering & Shipbuilding Employers' Federations with a view to getting an improved offer in answer to their pay claims.

The engineering employers have offered increases up to 7s. a week, but the shipbuilding employers have rejected the claim on behalf of shipbuilding employees.

Contracts and Tenders

Simmering-Graz-Pauker A.G. has received from the Austrian Federal Railways an order for 20 electric locomotives of Bo-Bo type, 83 *tonnes* weight, 75 m.p.h. top speed, and 4,200 h.p. on the continuous rating. They are to be class 1042 in the Austrian Federal list. Electric equipment orders have been divided between Elin-Union, Austrian Broun Beveri, and Austrian Siemens, Schuckertwerke.

British Railways, Southern Region, has placed the following contracts :—

J. E. Lesser & Son Ltd. : additional staff accommodation, Waterloo

James Robb & Son Ltd. : renovation at various stations, London (Eastern) District

Alfred Bagnall & Sons Ltd. : station renovations, Whitchurch North

Aubrey Watson Limited : piling to embankment, Haslemere

Durable Asphalte Co. Ltd. : repairs to roads, Waterloo Station

Durable Asphalte Co. Ltd. : resurfacing of roads and footpaths, London (Western) District

Maurice Hill Limited : station renovations, Sutton Common and West Sutton

Demolition & Construction Co. Ltd.: Ashford (Kent), preliminary works for reconstruction of Beaver Road bridge, extension of electrification.

The Export Services Branch, Board of Trade, has received calls for tenders as follow :—

From Egypt:

1,000 screw couplings for all types of rolling stock.

The issuing authority is the Egyptian Republic Railways. Bids should be sent to the Purchases & Stores Department Railways Building, fifth floor over Shoubra Subway, Cairo. The tender No. is E.R.321 G.8/2/1439. The closing date is January 14, 1961. The Board of Trade reference is ESB/32351/60. No further information is available at the Board of Trade.

From Pakistan :

370 tyres 3 ft. 7 in.
300 glut rings 3 ft. 7 in.
80 tyres 2 ft. 4½ in.

The issuing authority is the Chief Controller of Stores, North-Western Railway, Empress Road, Lahore, to whom bids should be sent. The tender No. is 210-S/10 (Part XI) PIC-60. Tenders are to be submitted on the form which can be obtained up to January 4, 1961, from the Office of the Chief Controller of Stores, N.W. Railway, Empress Road, Lahore. The closing date is January 5, 1961. The Board of Trade reference is ESB/31910/60.

112 all-steel railway platform trucks.

The issuing authority is the Chief Controller of Stores, Eastern Bengal Railway, Pahartali, Chittagong, to whom bids should be sent. The tender No. is P6/FI/140/60. The closing date is December 26, 1960. The Board of Trade reference is ESB/32344/60. Photo-copies of tender documents are not available at the Board of Trade.

1,130 wedges, C.S., for brass axle box W.D. wagon as per B. & A. Railway drg. No. AB-50 and PRSS No. M2 CL-A (Steel).

The issuing authority is the Chief Controller of Stores, Eastern Bengal Railway, Pahartali, Chittagong, to whom bids should be sent. The tender No. is P5/EB1/34/60. The closing date is December 26, 1960. The Board of Trade reference is ESB/32343/60. Photo-copies of tender documents are not available at the Board of Trade.

From Portuguese East Africa:

30 narrow-gauge railway wagons.

The issuing authority is the Ports, Railways & Transport Department, Lourenço Marques to whom bids should be sent. The tender No. is A/CFB/1/1-312/60. A provisional deposit of Esc: 10,000 must be made by tenderers. Specifications are obtainable from the Railway Warehouse at Lourenço Marques through the local agents or United Kingdom firms interested. The closing date is February 15, 1961. No further information about this call for tenders is available at the Board of Trade. The Board of Trade reference is ESB/31832/60.

26 luggage vans.

The issuing authority is the Ports, Railways & Transport Department, Lourenco Marques, to whom bids should be sent. The tender No. is 13/61. A provisional deposit of Esc: 750,000 must be made by tenderers. Drawings and specifications are obtainable from the Railway Warehouse at Lourenco Marques through the local agents of United Kingdom firms interested. The closing date is February 24, 1961. No further information about this call for tenders is available at the Board of Trade. The Board of Trade reference is ESB/31835/60.

Further details relating to the above tenders together with photo-copies of tender documents, unless otherwise stated, can be obtained from the Branch (Lacon House, Theobald's Road, W.C.1).

Notes and News

Canadian Pacific Railway Dividend.—A final dividend of 75 cents per share on the ordinary capital stock of the Canadian Pacific Railway Company has been declared in respect of the year 1960. A final of 2 per cent has been declared on the preference stock.

A.B.C. Coupler & Engineering Co. Ltd.—A petition for compulsory winding-up of the A.B.C. Coupler & Engineering Co. Ltd., Wolverhampton, was adjourned at the Chancery Division on December 12 for a further week.

Christmas Holiday Travel in the Western Region.—British Railways, Western Region, plan to run nearly 300 extra long-distance trains for Christmas holiday travellers during the period December 23 to December 28, inclusive. These will include 161 specials from and to London with 131 on cross country routes. Peak travel is expected today, Friday, with 94 extra trains scheduled and on December 27 when 84 specials will run. A Sunday service, with certain alterations will run on Christmas Day and on December 26. Special trains will run on a number of branch lines in the West of England and South Wales early on Christmas morning to connect with long distance overnight expresses.

Eastern Region Christmas Services.—The Eastern Region is running 381 additional main-line trains during the Christmas and New Year holiday period. Many of these will augment existing services between London and Scotland, the West Riding of Yorkshire, Newcastle and principal towns in East Anglia. Certain cross country services linking important provincial towns will be duplicated, and seat reservation facilities are being extended to include many of the additional long-distance trains. On Christmas Day and Boxing Day, modified Sunday services will operate on all lines.

Chloride Batteries Limited Transfer.—To achieve closer liaison between their Technical, Production and Sales Departments, Chloride Batteries Limited are transferring the major portion of their sales headquarters from London to the head office and principal manufacturing centre of the company at Exide Works, Clifton Junction, near Manchester on January 2. A London sales office, which will care in particular for automotive equipment, government and dry battery business, will be maintained at Grosvenor Gardens House, until January 30, when it will be transferred to 137, Victoria Street, London, S.W.1.

Vickers-Armstrongs (Engineers) Limited, Manufacture of Clearing Presses.—The range of small open-backed inclinable clearing presses being produced at the Crayford works of Vickers-Armstrongs (Engineers) Limited and marketed in Britain by the Rockwell Machine Tool Co. Ltd., Welsh Harp, Edgware Road, London, N.W.2, consists of 22, 32, and 45-ton sizes. Each has a re-designed pneumatically-operated Torc Pac drive unit which offers the advantage of immediate braking in the event of air or power failure—there being no overrun. The presses are driven by standard motors of 2, 3, and 5 h.p. respectively and operation is controlled through the Torc Pac by an electro-pneumatic system. They are constructed to high precision standards to ensure interchangeability and a comprehensive spares system will be at customers' disposal, together with a service exchange scheme on the complete Torc Pac unit. The field of application to the production of pressed-metal components is very wide, particularly where a high output is required. The minimum of floor space is required. The presses are easily adaptable for many varied duties and a range of optional extras can be supplied.

Decentralisation of the British Transport Commission Advised.—A report by the Association of British Chambers of Commerce, entitled "Transport for the Future," and based on an analysis of many aspects of transport, including train meals and London bus and Underground services, confirmed the view already expressed by the Association that a freely competitive transport system would provide the maximum commercial and operating efficiency. The report makes specific suggestions for future Government policy. These include the further decentralisation in railway control under a Railway Commission, the separation of docks and inland waterways from the British Transport Commission, the retention of British Road Services and London Transport under the new Railway Commission, with the status of a railway region, specific subsidies for uneconomic services held to be socially or strategically necessary, and a long-term programme of road development, ensuring that roads are adapted to modern traffic conditions. More flexibility in granting A, B and C passenger and goods licences is also advised, and the Government is encouraged to develop internal air services.

Railway Benevolent Institution.—The board of the Railway Benevolent Institution has granted annuities to two widows and two members involving an additional liability of £88 15s. per annum. A total of 119 gratuities were also granted amounting to £1,210, to meet cases of immediate necessity. Grants made from the casualty fund during November amounted to £1,518 17s.

Turner & Newall Limited Dividend.—A final dividend of 9½ per cent on capital doubled by a scrip issue by Turner & Newall Limited, makers of asbestos, magnesia, and allied products, makes a total equivalent to 12 per cent for the year ended September 30, 1960, compared with the forecast of 11¼ per cent and with the 10 per cent equivalent paid for the previous year. Consolidated trading profit increased by £1·76 million to £13·64 million.

I.C.T. Dividend Raised.—A final dividend of 7¼ per cent by International Computers & Tabulators Limited makes 11¼ per cent on £10 m. ordinary for the year ended September 28. The previous total was 10 per cent on £8,064,516 before the rights issue. Group profits expanded from £2,329,000 to £2,952,000. Deducting £1,026,000 (£1,025,000) for tax, the net profit of £1,926,000 compares with £1,304,000. After £704,000 (£509,000) for dividends and placing £872,000 (£768,000) to reserves, the balance forward is raised from £235,000 to £585,000.

A.E.I. Cable Works Move.—About 360 men will be affected and some put out of work by a decision made known recently by Associated Electrical Industries Limited to transfer telephone cable manufacture from Woolwich to Dagenham. The group has stated that it could be sure of finding work for 110 of the men concerned and has promised to do its best for the others. At the very least, it will either give notice equivalent to one week for every two years they have been working with the company, or else give them work to that extent.

London Train Delayed by Horses.—On December 13 passengers were delayed for nearly 30 minutes on the British Railways, Eastern Region, Fenchurch Street-Shoeburyness line when a train between Pitsea and Laindon struck and killed two horses. Trains were stopped between the two stations while an unsuccessful search was made for a third horse running loose. Services were affected for more than three hours.

Staff Housing in East Africa

Mr. Jairus Ounza, Stationmaster, Nakuru, East African Railways & Harbours, outside his house

Safe Handling Demonstration.—How to store and use industrial gas cylinders in safety was demonstrated in London recently by the British Oxygen Co. Ltd. at the request of the London branch of the Industrial Fire Precaution Association. The effect of excess oxygen in atmosphere was shown, and a demonstration was given of a fuel gas flash-back. The right way to deal with accidents resulting from the misuse of cylinders and gas-using equipment was also shown.

London Commercial Service Christmas Party.—Mr. H. A. Yates, and members of the London Commercial Service, British Railways, held their Christmas party at the National Provincial Bank Buildings, London, E.C.1, on December 20. This informal function was well attended by some 350 guests, representing a wide range of suppliers and manufacturers who have, during the course of the year, made use of British Railways goods services.

Rubery Owen & Co. Ltd. Licensee in France.—Societe Parisienne de Material et Equipment, a French manufacturer of foundry equipment, has been awarded the selling rights for the Hallsworth automatic moulding system in France and French territories under an agreement with Rubery Owen & Co. Ltd., of Darlaston, Staffs. Under the trade name Sopame, the French company specialises in complete foundry installations including melting plant. The Hallsworth equipment should be useful in French foundries producing small ferrous and non-ferrous castings.

Associated Commercial Vehicles Limited Results.—Group profit of Associated Commercial Vehicles Limited for the year ended September 30, 1960, subject to audit before charging taxation, amounts to £1,512,935 (£966,115). The net profit after all charges including taxation of £715,113 (£439,432) and after deducting proportion attributable to minority shareholders of £14,465 (£7,726) amounts to £783,357 (£538,238). A final dividend of 15 per cent is proposed, making a total for the year of 22½ per cent.

British Railways Posters.—The two double-crown posters shown on this page have been produced for British Railways by the British Transport Commission's Chief Publicity Officer. Both were designed to the Commission's requirements by A. R. Hundleby and are for display during the pre-Christmas period.

Mr. J. R. Hammond presenting a certificate of commendation to Mr. H. R. Carr, with Mr. W. R. Stevens on his left, and Mr. H. E. A. White behind Mrs. Carr

Change of Address.—The head office of the Road Haulage Association has been changed from 146 New Bond Street, London, W.1, to 22 Upper Woburn Place, London, W.C.1.

Presentation to Locomotive Fireman.—Mr. J. R. Hammond, General Manager, Western Region, British Railways, presented a certificate of commendation and a cheque on December 5, to Mr. H. R. Carr, a Swansea locomotive fireman, in recognition of his attempt to rescue a boy from drowning. Also in the accompanying illustration are Mr. W. R. Stevens, Divisional Traffic Manager, Cardiff; Mr. H. E. A. White, Running & Maintenance Officer, and Mrs. Carr.

Drugs on the Line.—Police were searching last week for the owner of a quantity of drugs, including morphine and penicillin, together with some hypodermic needles, found by the side of the railway line at Gerrards Cross in the Western Region of British Railways.

Engine of Express Derailed.—The engine and the front part of the leading coach of the Cardiff-Portsmouth express were derailed at St. Denys Station, Southampton, in the Southern Region of British Railways, on December 12. One passenger, a man, received slight cuts. The main line between Southampton and London was blocked. Single-line working was introduced after two hours.

M.A.N. Dividend Maintained.—Maschinenfabrik Augsburg-Nurnberg A.G. (M.A.N.) has recommended an unchanged dividend of 14 per cent for the year ended June 30, 1960. Turnover rose by 27 per cent to DM993m. from DM783m. previously, and net profits were DM10.54m. against DM10.51m. The amount of orders in hand increased to DM1,180m. (DM1,120m.).

Steel Furnace Plant.—Lodge-Cottrell Limited, a member of the Simon-Carves group, is to build a blast furnace gas cleaning plant, worth about £300,000, at the Clay Lane ironworks of Dorman Long (Steel) Limited. It is also supplying Dorman Long with precipitators for Lackenby steel plant oxygen-blown furnaces. This contract is valued at approximately £66,000.

Christmas Decorations on the Underground.—A seasonal touch has been imparted to at least one coach of a Circle train on the London Underground—it was seen on December 15 to be decorated with tinsel and other Christmas baubles.

Order for Propane Cutter.—Following extensive tests, Shipbreaking Industries Limited, a member of the Metal Industries Group, is acquiring 87 Harris 62-2F oxy-propane blowpipes made by British Industrial Gases Limited.

Withdrawal of Passenger Service from Beauchief Station.—The Eastern Region of British Railways announces that from January 2, 1961, passenger train services will be withdrawn from Beauchief Station, between Chesterfield and Sheffield. Passengers will be catered for at Millhouses and Ecclesall or Dore and Totley Stations; also by omnibus

Double-crown posters for display during pre-Christmas period

services operating in the area. Collection and delivery services for parcels traffic will continue to be available. Parcels will be dealt with at Millhouses and Ecclesall, or Dore and Totley.

Temporary Bridge Replaces Flood Damaged Structure.—British Railways, London Midland Region engineers completed, on December 9, a temporary bridge at Attenborough, Nottinghamshire, on top of the bridge seriously damaged by the flooded river Erewash. Before the temporary bridge was installed railway passengers were carried between Attenborough and Sawley.

Southern Region Lecture & Debating Society Tour of Northern Ireland.—British Railways, Southern Region, Lecture & Debating Society has arranged a tour of the North of Ireland for January 19-22. The tour will include visits to the Harland & Wolfe Limited Shipbuilding Yard, Ulster Transport Authority road & rail undertakings, the Port of Belfast Authority, and places of general interest. Passports are not required for the tour. The inclusive cost is £4 10s. Further details may be obtained from Mr. P. H. Walton, Honorary Secretary, Operating Officer's Office, Waterloo Station.

New Vicar Appointed to Christ Church, Crewe.—The Bishop of Chester has announced that the Reverend W. S. Pears has been appointed Vicar of Christ Church, Crewe, and will be taking up his new appointment in the New Year. In his new capacity he will also have a special responsibility for ministering to the Church of England personnel employed by British Railways in Crewe. There has been a long history of cordial relationships between the Church and the Railways in the past in Crewe, and Christ Church was itself built by the Railway Company.

Hotel Building Activities Increased.—The British Travel & Holidays Association reports that there has been a marked increase in hotel-building activities in Britain. Two new hotels, the "Skyway" at London Airport and the "Londoner" in Welbeck Street, have been opened in London, and 16 more have been planned for the near future. New establishments have been opened during this year in Glasgow, Swansea, Burnley, Plymouth and Tresco, and other buildings have been proposed in Newcastle, Norwich, Middlesbrough, Plymouth, Birmingham, Glasgow, Belfast, and many other provincial cities and towns.

Cleanliness and Tidiness Prizes for Railway Stations.—British Railways, North Eastern Region, has announced the results of its 1960 station cleanliness and tidiness competition. For the purpose of the competition, the nine large stations in the Region, Newcastle, Darlington, York, Leeds City, Leeds Central, Hull Paragon, Bradford Exchange, Bradford Forster Square and Sunderland, are judged as a separate section, and Hull Paragon has for the fourth year in succession, been awarded the first class prize, retaining for another year the trophy which is awarded annually to the winning station. York station has been awarded the second class prize, and Bradford Forster Square the third class prize. Of the remaining stations, 19 qualified for first class, 42 for second class and 91 for third class awards.

Institute of Transport South Western Section Luncheon.—The annual luncheon of the South Western Section of the Institute of Transport was held at the Imperial Hotel, Exeter, on December 2, 1960. The President of the Institute, Mr. K. W. C. Grand, responded to the toast "The Institute of Transport" proposed by the Mayor of Exeter, Alderman P. F. Brooks. The toast "The South Western Section" was proposed by Mr. T. D. Corpe, and the response was given by Mr. H. L. Ellis. The Chief Constable of Somerset, Mr. K. W. L. Steele, responded to the toast "The Visitors" proposed by Mr. W. H. Sutton. Mr. L. J. Crook, Immediate Past Chairman, presided.

Railway Stock Market

The recent reaction in stock markets, which put some shares down to their lowest levels of the year, attracted buyers and a moderate rally developed. Nevertheless, caution was still in evidence, although there are growing hopes that markets may rally early in the new year when some £100,000,000 of the Ford Motor pay-out money is likely to be reinvested.

Among foreign rails, Antofagasta ordinary stock eased to 17¼ at which there is a yield of over 11¼ per cent on the basis of the 2 per cent with which dividends are being resumed. The 5 per cent preference stock eased to 33 and yields as much as 14½ per cent. The high yields reflect uncertainty whether the past year's improved results can be maintained. Mexican Central "A" bearer debentures kept steady at 60, and elsewhere, Sao Paulo Railway 3s. units were again quoted at 1s. and United of Havana second income stock at 6.

Canadian Pacifics, after easing, firmed up to $39¼, at which there is a yield of over 6⅞ per cent; the 4 per cent preference stock at 60½ yields 6⅝ per cent and the 4 per cent debentures give a similar yield, having also changed hands around 60¼. White Pass shares were $10.

Nyasaland Railways shares were again 9s. and the 3½ per cent debentures receded to 37½. Midland Railway of Western Australia ordinary stock was dealt in at 7. West of India Portuguese stock was 110½, and Barsi Light Railway quoted at 17½.

Elsewhere, Chilean Northern first debentures were 53½, Costa Rica ordinary stock 33½, and Guayaquil & Quito assented bonds 62½. Paraguay Central prior debentures changed hands at 15½, the "A" stock at 1 and the "B" stock at 2. International of Central America common shares were $19, and the preferred stock $108½.

In the engineering and kindred sections, Beyer Peacock 5s. shares held steady at 6s. 0¼d., at which there is a yield of nearly 9½ per cent on last year's 12 per cent dividend. Charles Roberts 5s. shares kept at 8s. 3d., Birmingham Wagon came back to 26s. 10½d. and North British Locomotive shares remained at 6s. 6d. G. D. Peters were 15s. 7½d., while in other directions, Wagon Repairs 5s. shares came back to 18s. 9d. after an earlier rally, and Gloucester Wagon 10s. shares were 9s. 10½d. Westinghouse Brake were 37s. 9d.

Mainly because of fears of a further reduction in motor car production in the near future and reduced demand for car bodies, Pressed Steel 5s. shares came back to 26s. 3d.—their lowest of the year. Dowty Group 10s. shares were firmer at 32s. 9d. Ransomes & Marles 5s. shares have been steady at 23s. 9d. with Pollard Bearing 4s. shares 31s. 6d. Moreover, Stone-Platt at 54s. 6d. have been well maintained on balance. A.E.I., after 39s. 3d., gained a fewpence at 39s. 6d.; English Electric were 30s. 9d., their lowest for the year; and G.E.C. changed hands around 30s. Crompton Parkinson 5s. shares were 10s. 10½d. Ruston & Hornsby, however, strengthened to 25s. 6d.; Mather & Platt to 42s. 9d., and Vickers to 27s. 6d. Guest Keen rallied well to 77s. 3d., but steel shares generally have remained uncertain owing to a certain amount of selling because recent dividend increases were not up to best expectations. Later, however, the lower prices brought in buyers.

Forthcoming Meetings

December 28 (*Wed.*).—The Institute of Traffic Administration, Devon & Cornwall Section, at the South Western Gas Board Theatre, Plymouth, at 7.15 p.m. "Machines and Men in Management," Mr. J. W. Dean.

January 4 (*Wed.*).—The Newcomen Society, at Kensington Science Museum, at 5.30 p.m. "Joshua Gilpin, an American Manufacturer in England and Wales: Pt. II, 1811-14," Dr. H. B. Hancock and Dr. N. B. Wilkinson.

January 4 (*Wed.*).—British Railways (Southern Region), Lecture & Debating Society, at the Chapter House, London, at 6 p.m. "Personal Reminiscences of Dugald Drummond and his Locomotives," Mr. T. Clyde Britten.

January 5 (*Thurs.*).—British Railways (Western Region), London Lecture & Debating Society, at Headquarters Staff Dining Club, Bishops Bridge Road, Paddington, London, at 5.45 p.m. "Design & Transport," illustrated talk, Mr. T. H. Summerson.

January 7 (*Sat.*).—Railway & Canal Historical Society, North Western Group. Meeting, at Oddfellows' Institute, Stockport, at 6.30 p.m. "Architecture of the Canals," Dr. C. T. G. Boucher.

OFFICIAL NOTICES

NEW ZEALAND GOVERNMENT RAILWAYS DEPARTMENT

IT IS proposed to purchase 6 sets of diesel engines and hydraulic torque converters for diesel hydraulic locomotives: 260 h.p. 3 ft. 6 in. gauge. Tenders are due to close in New Zealand on 8 February, 1961. Manufacturers of this equipment are invited to apply to:—

Chief Purchasing Officer,
New Zealand Government Offices,
Purchasing Branch (C/F.99/3199),
Adelphi Building,
John Adam Street,
London, W.C.2
for tender documents.

Foreign Employment
ROADMASTER

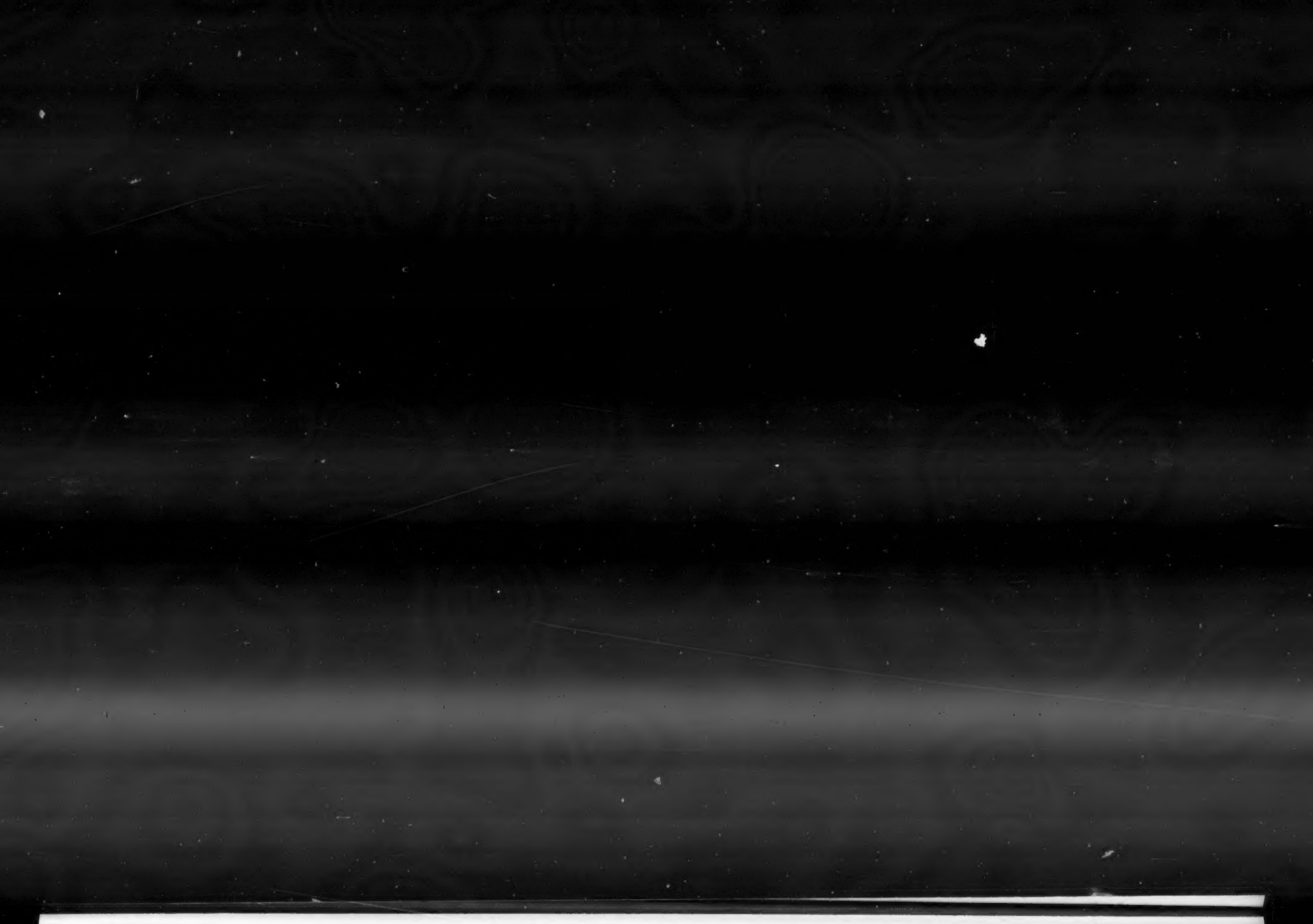
ENGINEERING GRADUATE preferred; minimum of two years engineering training essential.

Require two years varied railroad engineering service, or five years in direct charge of track crews. Will supervise 135 men maintaining 45-mile railroad assign work, order materials, be responsible for safety, make regular detailed inspections of roadbed and all track on main line, sidings and yards, bridges, tunnels, etc. Will make engineering calculations relating to maintenance and use of structure and equipment. Must speak Spanish. Married or single candidates acceptable.

Excellent opportunity large copper company, Chile, South America. Two year contract with transportation both ways for you and family. Basic salary $525.00 to $650.00 per month depending upon age and experience of applicant.

Box 6, *The Railway Gazette*, 33 Tothill Street, S.W.1.

CANADIAN MOTORWAYS LIMITED

Appointment of President

CANADIAN Motorways Limited, a trucking and moving business with annual revenues of some $25 million, requires a top executive as President and General Manager, to operate from the Company's head office at Toronto. Applicant must be a proved man of outstanding ability, and the salary will be of the order of the equivalent of £10,000 per annum. Replies to this advertisement (which is being made internationally) will be treated in the strictest confidence, and should be addressed to the Chairman of the Company, Mr. T. Robert Williams, Stratton House, Piccadilly London, W.1.